

MEETING THE LEARNING NEEDS OF INDIVIDUAL  
CHILDREN IN THE MAINSTREAM CLASSROOM

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## ABSTRACT

A teacher in a mainstream classroom identified six children with behaviour difficulties or learning difficulties who were not receiving any assistance outside of the classroom. The teacher was to independently complete a functional assessment of each child to reach a hypothesis about the cause of the difficulty, and then choose and implement an appropriate intervention. Treatment integrity was monitored throughout the interventions to ensure correct implementation. It became apparent that the teacher was unable to complete adequate functional assessments or maintain appropriate interventions because of the time constraints associated with being in a classroom and her lack of specialist knowledge.



## CHAPTER 1

### INTRODUCTION

The introduction of inclusive education to schools in the late twentieth century has significantly changed classrooms both in New Zealand and internationally. The main principle of inclusive education is that children with special educational needs (SEN) are entitled to be educated in mainstream classrooms (Lindsay, 2004; Macfarlane, 2007). The inclusion of children with special educational needs in mainstream classrooms is seen as a way of removing barriers to learning, improving learning outcomes and decreasing discrimination (Lindsay, 2004). The consequence of inclusive education policies is that mainstream classes now have to cater to a more diverse range of students (Wearmouth, 2004). More specifically, the teachers of today's mainstream classrooms have to manage groups of children with an increased diversity of teaching needs (Macfarlane, 2007; Prochnow, Kearney, & Carroll-Lind, 2000).

The term 'special educational needs' encompasses a wide range of teaching needs. In New Zealand, the Ministry of Education's policy on SEN includes various types of learning difficulties, communication difficulties, behaviour difficulties and sensory and physical disabilities within the category of special educational needs (Ministry of Education, 2007). The Ministry provides a number of resources designed to help the teachers of mainstream classes support children with special educational needs. These include "specialist support, therapy, staffing, equipment and other materials, property modification and transport, as well as advice and specialist support" (Ministry of Education, 2007).

Prochnow et al. (2000) found that even with the additional support provided by Group Special Education, special education grants, Resource Teachers: Learning and Behaviour (RTLb) and Resource Teachers: Literacy (RTLit), approximately half of all teachers report not receiving the support needed in order to meet the needs of children with special educational

needs in their classrooms. Behaviour difficulties and learning difficulties were the two areas of concern most often identified as needing extra support. Behaviour difficulties include hyperactivity, attention deficit problems, social skills deficits and aggression (Cowley, 2006). Children with behaviour difficulties disrupt the classroom, which results in decreased opportunities for learning both for the child concerned and for other children in the classroom (Sterling-Turner, Robinson, & Wilczynski, 2001). Learning difficulties include delays in learning to read, write and spell, delays in language and delays in mathematical development. Children with learning difficulties may display behaviour difficulties in order to escape academic tasks which they find too difficult. (Ervin et al., 2001; Sasso, Conroy, Stichter, & Fox, 2001). Difficulties faced by children with behaviour difficulties and learning difficulties can easily compound and further affect the child's academic development.

The question raised by these issues is how teachers are to manage these behaviour and learning needs in addition to teaching the other 20 to 30 children in a mainstream classroom? It is important that these children get the help and support they require early on so their education is disrupted as little as possible. It therefore is necessary to correctly identify these children and to diagnose their area of difficulty so that the appropriate intervention can be provided (Brahm, 2007).

## Two Classifications of Behaviour Difficulties and Learning Difficulties

### *Diagnostic and Statistical Manual of Mental Disorders*

The most extensively used classification of behaviour difficulties and learning difficulties is that which is set out in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM). The DSM is a medical classification that aims to define disorders for the purpose of research and treatment and for the prediction of outcome (Parnas &

Zahavi, 2002). The DSM-IV-TR (American Psychiatric Association, 2000), defines behaviour and learning disorders in the categories listed below.

*Attention-Deficit and Disruptive Behaviour Disorders.* This group includes Attention-Deficit/Hyperactivity Disorder (ADHD), Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD), as well as two subtypes. The first of the three main categories, ADHD is defined by the major ongoing symptoms of inattention and/or hyperactivity-impulsivity. The second, CD is described as recognisable by ongoing behaviour that infringes on the rights of others or breaks age-appropriate societal norms or rules. The third, ODD is defined by the presence of ongoing negativistic, hostile, and defiant behavior (American Psychiatric Association, 2000).

*Learning disorders.* The learning disorders listed in the DSM-IV-TR are Reading Disorder, Mathematics Disorder, Disorder of Written Expression and Learning Disorder Not Otherwise Specified. These are identified by the presence of academic performance that is significantly below the expected level given the child's education, chronological age and intelligence test score (American Psychiatric Association, 2000).

*Critique.* The DSM represents a consensus across the psychiatric profession and provides uniformity in classification, diagnosis and research. However, there are a number of difficulties with this classification system. First, behaviour and learning difficulties are seen as medical "disorders" that originate from within the child. The diagnosis ignores the effects of the child's social environment upon his or her behaviour and development (Mash & Dozois, 2003). Second, each disorder is identified by the presence of a set of behavioural indicators that does not take into account the aetiology of the disorder (Brahm, 2007). The behaviour displayed by different children may be the same, but it may have come about for completely different reasons. Writing problems may occur because the child has poor fine motor skills, has received insufficient instruction or has not had sufficient opportunity to practice writing. Each of these

writing problems will require a different intervention if they are to be overcome (Brahm, 2007).

A third difficulty with the DSM is that it makes categorical distinctions between disorders where there appears to be a lot of overlap (Mash & Dozois, 2003). This results frequently in a diagnosis of co-morbidity for the child, which once again leads to difficulties in selecting an appropriate intervention. A common co-morbidity is ADHD and CD, yet the treatment for each disorder is different (Church, 2003).

### *Educational Classification*

The educational classification of behaviour difficulties and learning difficulties attempts to overcome the shortcomings of the medical model by acknowledging the social and educational context of behaviour difficulties and learning difficulties (Brahm, 2007). This search for environmental and contextual causes redirects practitioner attention towards changes which may help the child overcome the difficulty.

*Behaviour difficulties.* In the United States of America, behaviour difficulties are referred to as emotional and behavior disorders (EBD) and defined as behaviours which are “significantly different from appropriate age, cultural or ethnic norms to the extent that the responses adversely affect educational performance” (Kavale and Forness, as cited in Church, 2003, p. 52). One benefit of this description is that it acknowledges the importance of cultural expectations and developmental age. A disadvantage is the continued use of the term ‘disorder’ and its implications.

In the United Kingdom, behaviour difficulties are referred to as emotional and behavioral difficulties and are defined to include children who display a range of emotional and behavioral difficulties, including isolation, disruption and hyperactivity (Church, 2003). This definition is careful to specify that emotional and behaviour difficulties are not mental disorders.

In New Zealand (NZ) the term “child with severe behaviour difficulties” is used to refer to children who engage in behaviour which poses a danger to him or herself, to others or to

property, or which restricts the child's access to normal settings or effects his or her educational achievement (O'Brien & Ryba, 2005).

*Critique.* Educational classifications of children with behaviour problems also create diagnostic difficulties as they are based only on the observed behaviour of the child. Although the United Kingdom and New Zealand have moved away from the medical model of 'disorders' the diagnostic focus is still very much a focus on behavioral symptoms and not on behaviour-and-purpose or behaviour-and-consequences. Diagnoses of behavioral difficulties made in the UK and NZ still ignore environmental impacts (Mitchell, 1999). The same behaviour can be used for different purposes. A preschool child saying a swear word in class will most likely be repeating a word that he or she has just heard, while a teenager swearing is more likely to be engaging in an aggressive act.

It is also problematic to focus solely on the child's behaviour without reference to their development as there are differences in the behaviour expected from different age groups (Church, Tyler-Merrick, & Hayward, 2006). Additionally, a child refusing to look a teacher in the eye when spoken to might be considered disrespectful in most New Zealand schools and yet for Maori children, looking at the floor when an adult is talking is a sign of respect. So certain behaviours can be judged to be inappropriate in specific social environments and not in others (Macfarlane, 2007). Educational classifications are just beginning to take into account the fact that children with behaviour difficulties are not a homogenous group (Brahm, 2007).

*Learning difficulties.* Learning difficulties have proven difficult to classify. This is because of the multidisciplinary nature of the educational system, the lack of specific identification criteria and the use of the broad labels such as 'learning disabilities' (Lyon, 1996). Most definitions of learning difficulties are exclusionary, in that they cannot be the consequence of many of the conditions that hinder learning (Lyon et al., n.d.). As a result, children with

learning disabilities are often diagnosed not on the basis of what they can do, but rather of what they cannot do.

Learning difficulties are called 'learning disabilities' in the United States of America and are dealt with under the Individuals with Disabilities Education Act (Lyon, 1996). This act specifies that the "term does not apply to children who have learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage" (Code of Federal Regulations as cited in Lyon, 1996, p. 55). In the United Kingdom, the term 'learning difficulty' is used to refer to problems that might arise due to medical, emotional or language problems, whereas 'learning disability' is used to indicate an overall intellectual or functional impairment (British Institute of Learning Disabilities, n.d., p.2). In New Zealand, the preferred terms are 'learning difficulties' or 'specific learning difficulties' as these do not imply that the learning problems are based on a physiological disability (Tunmer & Chapman, 2005).

*Critique.* The biggest problem with the definition used in the United States of America is that children whose learning difficulties arise from environmental, cultural or economic disadvantage are excluded. Yet these are the main risk factors for underachievement (Lyon et al., n.d.). In the definitions from the United Kingdom and New Zealand there is still the implication that the difficulty resides within the child and not within the educational environment. Mitchell (1999, p. 205) states that the term used by the Ministry of Education, "students with special education needs", implies that the student is the problem and suggests that it should be replaced with "learners who experience barriers to learning". This term still allows that the child requires help but does not place the source of the difficulty within the child. Adequate definitions of learning difficulties and behaviour difficulties are needed to ensure that all children are able to acquire the skills needed for a productive life.

## Traditional Diagnostic Procedures

### *Behaviour Difficulties*

*Teacher nomination.* Teacher nomination is the most commonly used means of identifying children with severe behaviour difficulties (Parrish, 2002). Church (1996) found that although teachers were mostly accurate in their identification of non-compliant or antisocial children, they nominated one-third more than were identified by a well developed rating scale. Teacher nominations are subject to bias depending on each teacher's experience, knowledge and tolerance levels. A teacher who has had much experience of children with behaviour difficulties will be less likely to refer a child with moderate difficulties for specialist help, whereas a teacher with little experience of children with behaviour problems is much more likely to refer the child.

*Diagnostic interviews.* The parents of children with behaviour difficulties are often interviewed using a structured interview. The most commonly used one is the Diagnostic Interview Schedule for Children (DISC) (Church, 2003). This can be used by lay interviewers in most settings but it does present a number of problems. The practicality of this interview has been questioned due to the length of time it takes to administer, and its reliability and validity has yet to be tested for all ages of children with behaviour difficulties.

*Checklists and rating scales.* Behaviour difficulties can also be diagnosed through the use of checklists and rating scales (Sasso et al., 2001). These are used as screening tools for children with severe behaviour problems, and diagnoses are often linked to the DSM classifications. Three of the most commonly used scales are the Child Behaviour Checklist (CBCL), Conners' Rating Scales and the Strengths and Difficulties Questionnaire. These are quicker to use than a full diagnostic interview, and are normally completed by the child's teacher and/or caregiver.

There is currently no standardized screening instrument specifically designed for New Zealand students (Church, 2003). The revised version of the Canterbury Social Development Scale is designed to identify children with behaviour difficulties in New Zealand. It consists of 30 items, 15 of which refer to antisocial behaviour and the other 15 which refer to social skills (Church et al., 2006).

*Direct observation.* Direct observation of child behaviour was initially used for research but has also been used in New Zealand classrooms for diagnostic purposes (Church, 2003). There are two ways of making direct observations: one is narrative recording in which the observer writes a descriptive account of the child's behaviour and the antecedents and consequences of this and the other is measuring the frequency of occurrence of categories of behaviour. Direct observation tends rarely to be used for diagnosis because of the time and expense involved. However, this is the only procedure that can be used to check the accuracy of decisions made on the basis of data collected through interviews and rating scales.

*Critique.* Checklists and rating scales are the most commonly used tools for identifying children with behaviour difficulties because they take less time than diagnostic interviews and are more accurate than teacher nominations. However, they still generate a number of problems. The correlation between teacher and parent ratings is often low, as is test-retest reliability. This lack of reliability probably occurs as a result of differences in the interpretation of the category definitions, different attitudes towards the child, different beliefs regarding the causes of a child's misbehavior, and different levels of individual tolerance for misbehavior (Hinshaw & Zupan, 1997). In order for a diagnostic procedure to accurately reflect a child's experience it must measure and record behaviour frequency and function and do so with adequate accuracy (Evans & Paewai, 1999). Most checklists have only a 3 to 5 point scale, and are therefore severely limited in their capacity to assess frequency of occurrence (Sasso et al., 2001). This is true for the assessment of both behaviour difficulties and learning difficulties. The behaviour of



two children might be similar, but where one child displays the behaviour 10 times during the day for the other it may only occur twice. When assessing reading difficulty we must be able to differentiate between a child reading at 50 words per minute and a child reading at 60 words per minute, as this can be the difference between not understanding the text and reading with comprehension.

A second weakness of this technique is that it is very difficult to obtain an accurate measure of the relative frequency with which particular behaviours produce particular consequences when using a rating scale. A child can be non-compliant for different reasons: because he or she is bored, the work is too difficult or because he or she wants to avoid interacting with the teacher. A child may have difficulty reading because he or she can not see the words clearly, because English is a second language, or because he or she wants attention from the teacher.

An additional problem with the checklists and rating scales is that most are based on the DSM classification and its underlying assumptions that behaviour difficulties and learning difficulties can be diagnosed on the basis of child behaviour alone.

*Multiple gating procedures.* The Systematic Screening for Behaviour Disorders (SSBD) was designed to answer some of the above criticisms of diagnostic tests (Church et al., 2006). It aims to identify children at primary school with emotional behaviour disorder by using a multiple gating procedure to screen at risk children. It consists of a teacher nomination, followed by two rating scales and then direct observation done in the classroom by a professional other than the teacher. The direct observations include recording time on-task in the classroom for 15 minutes over two different occasions and then social behaviour in the playground over two 15 minute sessions. However, when Church et al. (2006) developed a multiple gating procedure to use within New Zealand they found that the direct observations that were recommended in the SSBD were insufficient to accurately identify the function and

frequency of the antisocial behaviour. Function was unable to be identified as the observations were primarily designed to produce a measure of on-task behaviour. Frequency was unable to be identified as the observations only took place for 15 minutes over two occasions.

### *Learning Difficulties*

*Psychometrics.* The most common procedure for identifying children with learning difficulties has been to look for an IQ-achievement discrepancy (Lyon, 1996). This procedure is based on the assumption that IQ scores are a good predictor of a child's ability to learn (Lyon et al., n.d.). A marked discrepancy between a child's IQ and his or her achievement in a particular academic subject is assumed to indicate a learning disability.

*Curriculum based measures.* Curriculum based measures (CBM) can be used to identify children with emerging academic learning problems (Alonzo, Ketterlin-Geller, & Tindal, 2007). As a screening device CBM compares a child's performance with that of same-aged peers, and as a diagnostic tool it can provide information about specific skills deficits. CBM differs from psychometric achievement testing in a number of ways. Hosp, Hosp, & Howell (2007) argue that CBM is more closely aligned with the classroom curriculum, that it has proven reliability and validity, that it uses criterion-referenced measures and standardized procedures, and that its results are easily summarized for decision making. Curriculum based measures are quick to administer and can be administered by the classroom teacher following relatively brief training (Alonzo et al., 2007).

*Critiques.* It is now argued by many in the field that IQ-achievement discrepancies are a poor way of identifying learning difficulties (Lyon et al, n.d.). First, IQ-achievement discrepancy tests make the incorrect assumption that IQ scores can predict learning potential. Second, to compare IQ scores with academic achievement scores can lead to many conceptual and statistical problems as there are many different ways of calculating the discrepancy and different decision rules that can be operated when a discrepancy is identified. Another problem

is that the IQ-achievement discrepancy procedures makes the early identification of learning difficulties unlikely, as children need to initially fail academically in order to be recognised and get the necessary help (Lyon et al, n.d.). Psychometric testing is also deficit oriented, in that the difficulty is seen to be within the child. This means that the possibility of instructional failure is ignored (Bourke & Mentis, 2007).

### Functional Assessment

There have been a number of attempts to solve the problems posed by conventional diagnostic measures and procedures. One recent development is called functional assessment (Carr, 1994; Ervin et al., 2001; Iwata, Dorsey, Slifer, Bauman, & Richman, 1994).

#### *Description of Functional Assessment*

A functional assessment is designed to collect enough evidence to generate hypotheses regarding the function of problem behaviour within a specific social environment (Church, 2003; Evans & Paewai, 1999; Smith & Sugai, 2000). Functional assessment is often followed by a functional analysis in which selected environmental variables are manipulated to test the existence of a causal relationship between the environment and the problem behaviour (Anderson, English, & Hendrick, 2006; Horner, 1994; Roberts, Marshall, Nelson, & Albers, 2001). Functional assessment aims to discover why a person engages in problematic behaviour. Functional assessment then seeks to change behaviour so that an effective intervention can be designed.

#### *History of Functional Assessment*

Functional assessment was initially used in an attempt to identify the different causes of problem behaviour for children with intellectual disabilities (Carr, 1994). At times the challenging behaviours of children with intellectual disabilities, such as self-injury and aggression, were potentially dangerous to themselves (Carr, 1994; Iwata et al., 1994; Smith &

Churchill, 2002). The severity of these problem behaviours demanded a quick intervention rather than one that examined the environmental variables that maintained the behaviour (Iwata et al., 1994). Early treatments attempted to superimpose strong reinforcing or punishing contingencies over the existing, but often unknown, reinforcement contingencies (Gresham et al., 2004; Hanley, Iwata, & McCord, 2003; Mace, 1994). However because this method disregarded the relationship between problem behaviour and the environmental conditions maintaining it, it resulted in interventions involving much trial and error (Carr, 1994). In order to find an effective intervention it is important to understand the cause of the individual's behaviour, and this means examining the positive and negative contingencies that are maintaining the problem behaviour (Mace, 1994). It then becomes important to collect sufficient data on environmental conditions to establish what these reinforcers are.

Carr (1977) reviewed the literature related to self-injury and found that there appeared to be five commonly supported hypotheses regarding the motivation behind this behaviour. Carr (1977) also concluded that motivation was determined by multiple factors. Carr's initial five hypotheses were later refined to four: "attention seeking, escape from tasks, the generation of sensory reinforcement and access to tangible items or events" (Carr, 1994, p. 393). Iwata et al. (1994) used a method that overcame the difficulties of the risky behaviours to test these four hypotheses on nine participants who had developmental delays and showed self-injurious behaviours. Iwata et al. (1994) advocates for the use of an environment that is well-controlled and defined. This allows for greater control over how the behaviour is exhibited and over the amount of time required for establishing a baseline (Iwata et al., 1994).

Functional assessment was mainly used in clinical settings where variables were able to be tightly controlled by a supervising psychologist or therapist (Hoff, Ervin, & Friman, 2005; Finkel, Derby, Weber, & McLaughlin, 2003). This was at times problematic as children did not always engage in the expected problem behaviour in the clinical setting, possibly due to limited

exposure to the necessary variables (Ervin et al., 2001; Finkel et al., 2003). Functional assessment was therefore moved to the classrooms of the children requiring intervention. More recently, functional assessment has been extended to help normally developing children with behaviour difficulties and learning difficulties (Ervin et al., 2001; Sasso et al., 2001). Doing functional assessments in the classroom makes observation and analysis more difficult as there are multiple antecedents and consequences for children's responses. The research literature on functional assessment has expanded alongside these new developments, but there are still questions regarding the generalisability of the procedure across subjects, settings and experimenters (Gresham et al., 2004).

#### *Functional Assessment of Behaviour Difficulties*

The 1997 amendment to America's Individuals with Disabilities Education Act (IDEA) required that functional behavioural assessment and positive behavioural supports and interventions be used in schools for children who were at risk of expulsion or dismissal as a result of their antisocial behaviour. This was reconfirmed by the reauthorised Individual with Disabilities Education Act in 2004 (US Department of Education, n.d.). This legislation has played an important part in ensuring the ongoing use and further development of functional assessment (Gresham et al., 2004). However, functional assessments and analyses have only recently been expanded to include assessment of normally developing children with behaviour problems (e.g., Grandy & Peck, 1997; Ervin et al., 2001; Sasso et al., 2001). Ervin et al. (2001) found that 70 per cent of school-based functional assessments involved children with cognitive disabilities, compared to 18 per cent for children with behaviour difficulties and no cognitive disability.

*Step by step functional assessment and analysis for behavioural difficulties.* Functional assessment research for behaviour difficulties in the mainstream classroom does not yet have an established set of fully researched and tested procedures (Hanley et al., 2003). There have been

a number of manuals on functional assessment published, and while they differ with respect to details, they describe a common set of procedures (O'Neill et al., 1997; Umbreit, Ferro, Liaupsin, & Lane, 2007; Watson & Steege, 2003). This common procedure has been described by Church (2007b). It consists of both indirect and direct measures of behaviour. The aim is to list the physical contexts in which the problem behaviours occur and to identify the required replacement behaviours. A prioritising interview explores with the teacher which of the behaviours needs to be worked on first. Once this is established, direct observations are made in at least two different settings with a view to recording the frequency of occurrence of the referred behaviour and the replacement behaviour. Observations start with a narrative recording in order to identify the antecedents and consequences of the child's behaviour. This can take the form of an Antecedents, Behaviour and Consequences (ABC) Record Form. Once the antecedents and consequences are known then it is important to measure how frequent the child's behaviour is so that when an intervention is implemented it can be determined whether or not it is successful by measuring the frequency again. There are numerous behaviours that can be recorded and the decision of which one to measure depends on the results of the prioritising interview with the teacher. If inattention is the problem then permanent products (e.g. assignments completed or number of words written) are counted. If the child's antisocial behaviour is the main problem then positive, negative, and neutral social responses to others are recorded. The observer also records the consequences of the behaviour for the child, and evaluates whether antisocial behaviours are reinforced or punished. This is followed by functional analysis that addresses the following questions: Is this a performance or a learning problem? Does the child actually know how, when and where to perform the replacement behaviour? Is the child simply reacting to the aversive conditions which he or she is experiencing in a particular context, or is it a case of early onset antisocial development? Once these questions are answered, primary and secondary hypotheses can be generated regarding the

causes and maintenance of the child's misbehaviour. To test these hypotheses, an intervention plan is developed. The intervention is implemented for several days, and the child's reaction to the changed circumstances is used to support or negate the initial hypothesis.

*Typical findings of functional assessments for behaviour difficulties.* It has been found through functional assessments that the most common motivations for inappropriate behaviour in normally developing children are teacher attention, peer attention and escape from school work (Broussard & Northup, 1997; Doggett, Edwards, Moore, Tingstrom, & Wilczynski, 2001).

*Typical interventions suggested by functional assessments for behaviour difficulties.* Where the functional assessment indicates that the misbehaviour is maintained by teacher attention the intervention required is to advise teachers to attend to appropriate behaviour and ignore misbehaviour. There have been many demonstrations of rapid child behaviour change following this intervention (Doggett et al., 2001; Grandy & Peck, 1997; Smith & Sugai, 2000). Broussard and Northup (1997) and Sterling-Tuner et al. (2001) found that if peer attention is the factor maintaining inappropriate behaviour in the classroom, then this can be used to shape appropriate behaviour. Where the functional assessment indicates that the misbehaviour is maintained by the negative reinforcement of escape from school work, there needs to be an assessment made of the work to ensure it is not too hard. Among other positive reinforcements, rewards can be given for completed work and materials can be swapped for more appropriate ones (Hoff et al., 2005; Umbreit, 1995). Sometimes interventions can be self-managed (Gumbel & Golan, 2000). Smith and Sugai (2000) found that a functional assessment and the consequent use of a self-management strategy were successful in increasing on-task behaviour for a 13 year old boy with behaviour difficulties. Grandy and Peck (1997) also used a self-management intervention and found that it helped to teach the child to self-regulate by removing the need for external reinforcers and that it used less of the teacher's time. Other

benefits of a self-management system are that it is less inclined to extinction when the intervention is removed and that it is portable to other settings (Grandy & Peck, 1997; Smith & Sugai, 2000).

### *Functional Assessment with Learning Difficulties*

There is an obvious link between behaviour and learning difficulties, in that if a child is inattentive or failing to follow directions or complete tasks then they are unlikely to be learning. This is one possible cause of a lack of academic progress. Another possible cause is the selection of learning tasks which are either too easy or too difficult (Daly, Witt, Martens, & Dool, 1997). Hence it is not sufficient simply to assess the child's academic skills or simply to observe the child's behaviour in class. Both must be assessed in order to identify the cause of the child's learning difficulties and to pinpoint the best intervention for the child. Kern, Childs, Dunlap, Clarke, & Falk (1994) found that a boy with emotional and behavioural difficulties was using inappropriate behaviour to escape doing class work. By changing the curriculum slightly to allow him to use a computer instead of handwriting, which he found difficult, escape-motivated behaviour was reduced and the child began to complete his academic work.

Functional assessment to improve academic performance is an area of recent interest that has yet to be fully developed (Ervin et al., 2001). The problem with extending the functional assessment from behaviour difficulties to learning difficulties is that the cause of misbehaviour lies in operant contingencies (performance deficits), which can be identified quickly, whereas with learning difficulties the problem can lie in skills deficits which are more difficult to identify and subsequently fix (Daly, et al., 1997). A functional approach to understanding variations in academic progress is to relate achievement and/or failure to the instructional contingencies which have been and are being provided (Daly et al., 1997).

*Step by step functional assessment and analysis for learning difficulties.* Work on the functional assessment of learning difficulties is in the early stages of development. One



systematic approach has been described by Church (2007b). The functional assessment begins with diagnostic testing designed to identify the level of development that has been achieved with respect to necessary component skills. For children with reading delays this includes the ability to discriminate between different letters and phonemes and knowing an age appropriate number of letter-sound relations (Church, 2005). Decoding fluency and a large enough sight-word vocabulary are the next components to be evaluated. For the children with writing delays a similar assessment is undertaken including phoneme discrimination and reading level (Church, 2007a). This is followed by an assessment of handwriting and/or typing fluency and phoneme to grapheme conversion fluency. A good level of knowledge of morphemes is important for progress in spelling as is an age appropriate level of grammatical understanding. Once these have been assessed the missing skills most urgently needing intervention can be prioritised. Following this, direct observations are made of these skills being taught in the classroom. During this time, the observer records when the child is (a) working on and (b) avoiding working on the target skills. The observer also records the number of learning opportunities that the child is experiencing for each of the missing skills and the immediate consequences of the child's correct and incorrect answers. The direct observational data is used to address the following questions (Church, 2007b, p. 58): "Is the student currently receiving instruction in each of the targeted component skills?" "Is this instruction sufficiently intensive to ensure that the child will catch up to his or her peers?" "Is the practice which is being received in each of the target skills the type of practice which is designed to build these skills to fluency?" "Is the teaching which is being provided of sufficient quality to keep the error rate on practice tasks below 15% and/or to produce improvements from session to session?" "Is the student on-task for 90% of the time when working on learning and practice activities involving the target skills?" "Is there a probe testing and recording procedure in place with respect to each of the target skills so that the teacher can see the rate of progress that the child is making?"

“Have mastery criteria been specified for each of the target skills so that the learner can move immediately to the next skill on the list as soon as one of the target skills has been mastered?”. The answers to these questions allow primary and secondary hypotheses to be generated regarding the potential causes of the learning difficulties. An intervention plan can then be created to test these hypotheses. At this point Curriculum Based Management can be used to find the child’s frustration level versus instructional level, and then the curriculum can be manipulated to generate learning tasks at the right level of difficulty (Roberts et al., 2001). The intervention can be implemented for three to four weeks and the hypotheses checked against the child’s progress.

*Typical findings of functional assessments for learning difficulties.* Functional assessment and analysis of learning difficulties tends to identify factors external to the child (Daly et al., 1997). The four most commonly observed causes of learning difficulties are that the child does not want to do the work, that he or she has not spent enough time practising the missing skill, that there has not been sufficient instruction on how to perform practice tasks or that the practice tasks are too difficult (Daly et al., 1997).

*Types of interventions which result from functional assessment of learning difficulties.* There are many different interventions that are recommended for learning difficulties. Walberg (as cited in Daly et al., 1997) reviewed 8000 studies of academic performance and concluded that two interventions produced the largest overall effect in improving performance: providing shaping and comprehensive feedback, and giving incentives to work quickly and accurately. Roberts et al. (2001) listed a number of interventions which have research support and which result in improvements in the rate of learning. These include direct instruction and practice, self-instructional strategies such as ‘cover, copy compare’ and rewards for accuracy and completion.

### *The Treatment Integrity of Functional Assessments Undertaken by Classroom Teachers*

The early extensions of functional assessment for normally developing children with behaviour difficulties and learning difficulties in mainstream classrooms were directed and controlled by psychologists, therapists and researchers. Ervin et al. (2001) state that the 1997 Amendments to the Individuals with Disabilities Act required school personnel in America to be trained in the skills of functional assessment. The interesting question is whether or not teachers can learn the functional assessment procedures, and if so, whether or not teachers can learn to make good or effective intervention decisions based on the functional assessment data they have collected.

Treatment integrity refers to the extent to which a procedure, which has been shown to be effective under well-controlled research conditions, can be implemented in a real life setting with the same degree of fidelity as it was in the well-controlled settings (Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000; Lane, Bocian, MacMillan, & Gresham, 2004).

In a review of the functional assessment literature from 1980 to 1999, Ervin et al. (2001) found that it was the experimenter who was most likely to complete functional assessment. School personnel performed this task only 21 per cent of the time without assistance. School personnel managed the interventions without assistance 23 per cent of the time. Treatment integrity was measured for manipulated variables and/or treatment conditions in 57 per cent of studies. Treatment integrity was reported to be high in most of the studies in which data was collected.

Gansle & McMahon (1997) used 21 teachers and 49 students within those teachers' classrooms to test the importance of treatment integrity. They did this by monitoring the effects of differing levels of treatment integrity (100, 83.3 or 66.7 per cent) on targeted positive and negative classroom behaviours. It was expected that the highest level of behaviour improvements would occur with the 100 per cent treatment integrity level. However, even with

92 per cent treatment integrity relative to the teacher's assigned level of treatment integrity, the results showed similar levels of improved behaviour across all intensities of treatment integrity. It is important to point out here that in terms of assessment the teachers were told to choose one positive and one negative behaviour that they felt had the most adverse effect on the students' educational success and these became the target behaviours for the intervention. This method does not meet criteria for being a functional assessment and the minimal progress made across the differing levels of treatment integrity intensity could well be due to the intervention chosen (tangible rewards) not being the intervention which was actually required.

Research within the area of treatment integrity has highlighted the importance of correct implementation of interventions in order to achieve the desired results (Gresham et al., 2000; Lane et al., 2004).

#### *Critiques and Some Preliminary Answers*

Functional assessment is a useful tool to use within the classroom as it seeks to discover the causes of behaviour difficulties and learning difficulties. Functional assessment then uses this information to construct the most appropriate intervention given the circumstances. The procedure does, however, pose a number of potential difficulties for teachers trying to implement it within their classroom (Hoff et al., 2005; Iwata et al., 2000).

One potential limitation of functional assessment is that it requires the long term observation of behaviour and consequences, so is impractical for behaviours that are low-frequency but high-intensity like fighting, possession of weapons and occasional truancy. In these situations indirect measures such as teacher and parent interviews and rating scales may be more practical than direct observation (Mitchell, 2008; Sasso et al., 2001).

It is important to ask whether classroom teachers can learn the functional assessment procedure. Functional assessments require many skills that a teacher may not have, such as knowing how to make direct observations and design fluency tests (Hoff et al., 2005). The

assessment procedure also requires knowledge that the teacher may not have, such as knowledge of behavioural function and the effects of contingencies of reinforcement and punishment (Hoff et al., 2005). Iwata et al. (2000) claim that the basic skills needed for conducting a functional analysis can be taught within two hours. If this is so then many teachers could soon be instructed in functional assessment and so acquire the ability to identify the causes of behaviour difficulties and learning difficulties.

Other research suggests that functional assessment within the classroom requires an extensive time commitment that teachers may not feel they can afford (Hoff et al., 2005). This is a real problem as most classrooms contain 20 to 30 students. However, if functional assessment is the best available diagnostic and intervention tool available for children with behaviour difficulties or learning difficulties then this time issue needs to be further examined. Kern et al. (1994) advocate that the analysis and intervention should be feasible and practical in order for teachers to be willing to implement it. Riley-Tillman and Chafouleas (2003) say that the best way to introduce new practices is by initially requiring small adaptations to the classroom teacher's system. These smaller changes are more likely to be implemented correctly and maintained allowing for gradual implementation of the whole programme.

When faced with a question of the form "Will the teacher be able to...?" we need to use a particular kind of research method. We need to work with individual teachers in an attempt to find out (a) which parts of the procedures they can apply, (b) which parts they need assistance with and (c) which parts of the procedure are too difficult to apply. Since each struggling child has a different set of teaching needs this kind of research can only be undertaken on a case-by-case basis.

## Review of Previous Research

The aim of this review was to locate studies that involved teachers who were attempting to implement functional assessments in mainstream classrooms.

To select articles for possible inclusion, the PsycINFO electronic database was scanned for the following terms: treatment integrity (or treatment fidelity, treatment reliability, procedural integrity, procedural fidelity and procedural reliability), teacher\* and functional assessment (or functional analysis\*). These searches were limited by: (a) publication type: peer reviewed journals; (b) language = English; and (c) type = children aged 2 to 17 years old. Other articles were also found by reading through the reference section of articles selected from the electronic database search and articles read on functional assessment and analysis.

Empirical studies which met the following criteria were included in the review:

- Teachers attempted the functional assessment and functional analysis, with or without support from others
- With children who had been referred with behaviour and/or learning difficulties that could not be attributed to intellectual or physical impairment
- In a mainstream classroom setting.

## *Results*

The literature search produced six investigations in which the teacher implemented interventions based on the results of a functional assessment for children with behaviour and/or learning difficulties in a mainstream classroom. These studies are described in Table 1.

From Table 1, it can be seen that there exists only a small number of experiments that have examined what happens when teachers attempt to implement functional assessment and interventions with normally developing children in mainstream classrooms. Most of these studies are very recent. Five of these studies involved children with behavioral difficulties and one involved children with learning difficulties. In all cases the analysis and interventions were

guided by consultants. There appear to be no naturalistic studies of teachers completing functional assessments and implementing interventions without consultation or assistance. The treatment integrity of teachers' interventions appears to have been rarely measured, as can be seen by the limited number of article reports found for review. The results indicate that the teacher's implementation of an individualized intervention may deteriorate after the consultant is no longer overseeing it but that this can be reduced by providing performance feedback.

Table 1. *Overview of Empirical Studies Involving Teachers Attempting Functional Assessments with Children with Behaviour or Learning Difficulties in Mainstream Classrooms*

| Author(s)    | Number of children in | Functional            | Functional       | Implementation  | Results                                       |
|--------------|-----------------------|-----------------------|------------------|-----------------|---|
|              | general education     | assessment done by:   | analysis         | of intervention |   |
|              | setting and other     |                       | designed by:     | done by:        |   |
|              | selection criteria    |                       |                  |                 |   |
| Witt, Noell, | - Teachers = 4        | Consultant did        | Consultant did   | Teacher         | None of teachers maintained treatment         |
| LaFleur, &   | - Children = 4 boys   | assessment in 3       | an analogue test |                 | integrity above 80% for more than 2 days      |
| Mortenson    | with performance      | phases: performance   | of a failed      |                 | after training, but post-performance          |
| (1997)       | deficits.             | deficit screening,    | worksheet and a  |                 | feedback treatment integrity was higher.      |
|              |                       | reward preference     | reward           |                 | The level of treatment integrity affected the |
|              |                       | survey & analogue     | preference.      |                 | academic outcome of the children.             |
|              |                       | treatment assessment. |                  |                 |   |



Table 1 (continued). *Overview of Empirical Studies Involving Teachers Attempting Functional Assessments with Children with Behaviour or Learning Difficulties in Mainstream Classrooms*

| Author(s)    | Number of children in                 | Functional          | Functional       | Implementation  | Results  |
|--------------|---------------------------------------|---------------------|------------------|-----------------|--|
|              | general education                     | assessment done by: | analysis         | of intervention |  |
|              | setting and other                     |                     | designed by:     | done by:        |  |
|              | selection criteria                    |                     |                  |                 |  |
| Noell, Witt, | - Teachers = 3                        | Consultant did      | Consultant did   | Teacher         | Treatment integrity steadily declined over         |
| Gilbertson,  | - Children = 3 with                   | assessment in 3     | an analogue test |                 | time until performance feedback provided.          |
| Ranier, &    | academic performance                  | phases: performance | of a failed      |                 | Then moderate to high levels of treatment          |
| Freeland     | deficits                              | deficit screening,  | worksheet and a  |                 | integrity. Two of the three children' grades       |
| (1997)       | 1 girl, 3 <sup>rd</sup> grade, maths. | reward preference   | reward           |                 | improved from pretreatment to                      |
|              | 1 boy, 3 <sup>rd</sup> grade, maths   | survey & analogue   | preference.      |                 | maintenance. It is unknown why the 3 <sup>rd</sup> |
|              | 1 boy, 3 <sup>rd</sup> grade,         | treatment.          |                  |                 | child's performance did not increase, but it       |
|              | reading.                              |                     |                  |                 | could be due to her high rate of absence           |
|              |                                       |                     |                  |                 | (23%).   |

Table 1 (continued). *Overview of Empirical Studies Involving Teachers Attempting Functional Assessments with Children with Behaviour or Learning Difficulties in Mainstream Classrooms*

| Author(s)  | Number of children in     | Functional          | Functional     | Implementation  | Results                                      |
|------------|---------------------------|---------------------|----------------|-----------------|--|
|            | general education         | assessment done by: | analysis       | of intervention |  |
|            | setting and other         |                     | designed by:   | done by:        |  |
|            | selection criteria        |                     |                |                 |  |
| Mueller,   | -Teachers = 1             | Consultant did      | Consultant and | Teacher         | The child's level of problem behaviour was   |
| Edwards, & | -Children = 1 met         | indirect assessment | teacher found  |                 | lower during the implemented intervention    |
| Trahan     | criteria (out of 3 in the | via interview of    | that problem   |                 | of differential reinforcement of alternative |
| (2003)     | study) boy, 7yrs, with    | teacher and then    | behaviour      |                 | behaviour than it had been during baseline.  |
|            | problem behaviour.        | functional analysis | maintained by  |                 | The teacher implemented the intervention     |
|            |                           | using direct        | escape from    |                 | with 90-100% treatment integrity.            |
|            |                           | observation.        | task.          |                 |  |

Table 1 (continued). *Overview of Empirical Studies Involving Teachers Attempting Functional Assessments with Children with Behaviour or Learning Difficulties in Mainstream Classrooms*

| Author(s)    | Number of children in  | Functional          | Functional   | Implementation  | Results  |
|--------------|------------------------|---------------------|--------------|-----------------|--|
|              | general education      | assessment done by: | analysis     | of intervention |  |
|              | setting and other      |                     | designed by: | done by:        |  |
|              | selection criteria     |                     |              |                 |  |
| Zintl (2005) | - Teachers = 3         | Consultant did      | Consultant   | Teacher         | For 9 out of the 10 children, their mean                           |
|              | -Children = 10, aged   | component skills    |              | allocated time  | decoding fluency doubled and had a 64%                             |
|              | 8 – 9yrs, with reading | testing.            |              | and peer tutor  | improvement in prose reading fluency. One                          |
|              | difficulties.          |                     |              | & consultant    | teacher did not find time during 2 <sup>nd</sup> & 3 <sup>rd</sup> |
|              |                        |                     |              | monitored       | week to allocate practice time and                                 |
|              |                        |                     |              | implementation. | improvement reached a plateau for his                              |
|              |                        |                     |              |                 | children.  |

Table 1 (continued). *Overview of Empirical Studies Involving Teachers Attempting Functional Assessments with Children with Behaviour or Learning Difficulties in Mainstream Classrooms*

| Author(s)    | Number of children in  | Functional              | Functional       | Implementation  | Results                                    |
|--------------|------------------------|-------------------------|------------------|-----------------|--|
|              | general education      | assessment done by:     | analysis         | of intervention |  |
|              | setting and other      |                         | designed by:     | done by:        |  |
|              | selection criteria     |                         |                  |                 |  |
| Stage et al. | - Teachers = 1         | Consultant did          | Consultant       | Teacher         | Inappropriate behavior dropped to below    |
| (2006)       | - Children = 1 met     | indirect assessments    | designed         |                 | 20% when the child was taught to request   |
|              | critreria (out of 3 in | that reported settings, | analysis to test |                 | help instead of attention seeking in other |
|              | the study), boy, 4yrs, | antecedents, problem    | gaining teacher  |                 | ways which occurred 20-40% of the time in  |
|              | with problem           | behaviours and          | attention and    |                 | baseline. Teacher showed 100% integrity in |
|              | behaviour.             | consequences.           | escape from      |                 | implementing intervention.                 |
|              |                        |                         | task.            |                 |  |

Table 1 (continued). *Overview of Empirical Studies Involving Teachers Attempting Functional Assessments with Children with Behaviour or Learning Difficulties in Mainstream Classrooms*

| Author(s)   | Number of children in | Functional            | Functional   | Implementation  | Results                                      |
|-------------|-----------------------|-----------------------|--------------|-----------------|--|
|             | general education     | assessment done by:   | analysis     | of intervention |  |
|             | setting and other     |                       | designed by: | done by:        |  |
|             | selection criteria    |                       |              |                 |  |
| Wood,       | - Teachers = 1        | Consultant did an     | Consultant   | Teacher         | When treatment integrity was high, on-task   |
| Umbreit,    | - Children = 1 boy,   | interview with        |              |                 | behaviour occurred in 91% of intervals.      |
| Liaupsin, & | 8yrs, with behaviour  | teacher and child and |              |                 | When treatment integrity was low, on-task    |
| Gresham     | difficulties          | descriptive direct    |              |                 | behaviour occurred in 9% of intervals. On-   |
| (2007)      |                       | observation.          |              |                 | task behaviour was shown to directly reflect |
|             |                       |                       |              |                 | the teacher's treatment integrity.           |

### Aims of the Present Study

The aim of the present study was to extend the limited research on the practicality of teachers completing functional assessments and interventions within mainstream classrooms. Previous research has shown that teachers tend to be more involved at the intervention stage than at the functional assessment and analysis stage. The present study addresses the questions of whether (a) teachers can perform functional assessments of the apparent behaviour difficulty or learning difficulty and (b) design and implement an intervention appropriate for children with behaviour difficulties or learning difficulties.

## CHAPTER 2

### GENERAL METHOD

#### Subjects and Setting

The participants for the present study included one primary school teacher and six children from her Year 2 class in a Decile 3 urban primary school. The classroom teacher had a Bachelor of Teaching and Learning (Primary) and was studying for her Masters degree. She was in her second year of teaching and had taught Year 2 in her previous year also. The six children were all aged 6 to 7 years of age. The children included five boys and one girl. At the time of the study, the class contained 25 students. The class was taught by just one teacher except during her release time on Wednesday mornings. A regular release teacher taught the class during this time.

The teacher was enrolled in a Masters course which included the requirement to complete a functional assessment of a child with behaviour difficulties or learning difficulties in the classroom. The teacher welcomed the suggestion that further research be done within her classroom on this same subject.

An application for this project was submitted to the University's Human Ethics Committee and was approved, provided that all identifying details of the school, teacher and children remained anonymous; the teacher approved all assessments and interventions; and the parents and children gave their informed consent. Appendix 1 gives the ethical approval letter. During the approval process, a letter was sent to the school principal requesting permission to approach the participating teacher. Once approval had been received from both the University's Human Ethics Committee and the principal, a letter was sent out to the teacher and later to selected parents/caregivers. The letter sent to the teacher had a consent form attached for her to complete, as did the letter sent to the parents/caregivers that asked for approval for their child to

participate in the study. A verbal explanation of the study was read out to the children and any further questions that they had were answered before proceeding with any assessment.

The children were selected by the classroom teacher following a request to identify children who had behaviour difficulties or learning difficulties and who were not currently receiving help from outside their own teacher and classroom. Six children were identified. The teacher was asked to identify any disabilities that could be causing the behavioural or learning difficulties. No children were removed from the sample for this reason. Children who had prescription glasses were checked to ensure that they wore these when required.

The writer met with the teacher a number of times before meeting any of the children or observing in the classroom. The teacher expressed no preference regarding times that the writer visited the classroom. The writer arranged to email the teacher 24 hours before each intended visit.

The classroom was very neat with lots of examples of the children's art work on the wall. The class was well managed and ran to time most days. During the day the teacher set a mixture of individual and group tasks in different subjects. Children were taught by the teacher from the mat, at the children's desks, or in small groups at the 'jellybean table'. This was a table in one corner of the room that the teacher used for teaching small groups. During reading and mathematics times different tasks were set that were appropriate for the various levels of ability in the classroom. These were to be completed by the children individually at their desk while the teacher worked with a small group of children at the jellybean table. When the academic task was finished the children were expected to work or play quietly at the different reading or mathematics activities provided in the classroom.

The teacher addressed misbehaviour in appropriate ways. She tried not to reward attention seeking behaviour and tried to ensure that other children were not subjected to inappropriate behaviour. The teacher used an effective behaviour management programme that



included positive reinforcement (an individual sticker reward system) as well as positive and negative punishment (being sent to the principal and removal of privileges). One difficulty with the classroom was that it was in an L shape and this meant that if the teacher was at her desk or the jellybean table, she could not scan the whole classroom without moving.

The teacher was required to do a certain amount of assessment with her class. This consisted of a reading running record for each child every term and a normed mathematics assessment. Other assessments were more informal and consisted of regular checks of the children's work.

### Functional Assessment

For the functional assessments within the classroom, indirect and direct assessment procedures were used. These included behaviour rating scales, systematic observation using an interval recording procedure, and narrative description.

The behaviour rating scale used was the Social Development Scale (SDS). This estimates the frequency of occurrence of antisocial behaviour displayed by the child in the classroom. The SDS consists of 30 items, is completed by the classroom teacher, and takes approximately 8 minutes to do. Form B, for children in Years 1 to 4, was used in the present study. If the teacher referred a child for behaviour problems, she was given one of these rating scales to complete. The SDS has been found to identify children with antisocial behaviour with 95 per cent accuracy. Scores below 105 out of a possible total of 150 indicate antisocial development (Church et al., 2006).

During the direct observations the writer tried to not stand out in the classroom environment, since it is known that an additional person within the environment can affect the child's behaviour (Liberty, Clark, & Solomon, 2000). Direct observations were used to collect information regarding time on-task and the ratio of positive to negative social interactions with

others in the classroom. The interval recording procedure for time on-task consisted of counting the proportion of 5 second intervals that the child was on-task. On-task behaviour was defined as attending to an assigned task for at least 3 of 5 seconds and was recorded by marking a tick in the appropriate box of the recording form. Off-task behaviour was defined as attending to tasks or behaviours other than those which are set or permitted by the teacher and was recorded with a cross. The recording procedure for measuring the proportion of pro-social and antisocial behaviour was the Antisocial Development Screen (ADS). In the ADS, Social interactions (both initiations and responses) are coded as either positive, neutral or negative (Church & Tyler-Merrick, 2007). Positive and neutral interactions include all interactions and attempts to interact with anyone else other than those coded as negative. Negative interactions are coded into one of six subcategories. The first is non-compliance/defiance, which is defined as the child not complying with a specific instruction given to the class or individual within 25 seconds. The second subcategory is verbal abuse/swearing at someone. This is defined as derogatory verbal behaviour directed towards another person. The third is negative verbal behaviour. This is defined as all negative verbal behaviour that does not fall into the above two categories and this can include behaviours like whining and threats. Inappropriate physical behaviour is defined as all pushing and hitting type actions. The fifth subcategory, dangerous physical, includes all attempts to intentionally hurt the other person. The final subcategory is other antisocial behaviour and is defined as behaviour that is unacceptable within the setting but which does not fall into one of the above subcategories. Additionally, the behavioural response of the teacher and other children to the observed child is coded. These responses are coded as positive or negative. A positive response is defined in one of three ways. A continuance is when someone else complies with a request, answers a question or continues the conversation. A positive reaction is when someone else responds with some form of positive verbal or non-verbal action, like a smile. A reward is the third type of positive response. Negative responses

are defined in two ways. The first is a negative verbal reaction which includes a reprimands, warnings or reminders of a rule. The second is punishment. This includes planned ignoring, time out, loss of privilege and so on.

Samples of completed academic work were collected for the six children involved in the case experiments. These samples included writing and mathematics. The teacher also assessed the reading level and mathematical level of each participating child.

The classroom teacher completed a Weekly Reflection sheet which asked about the extra work required by the assessments and interventions that were being implemented, whether the teacher was receiving any assistance and whether she wanted any additional support during implementation. The Weekly Reflection sheet appears in Appendix 2.

## CHAPTER 3

### CASE EXPERIMENT 1: ANDY

#### Subject and Setting

Andy was a 6-year old boy. According to a reading assessment previously completed by the classroom teacher Andy's reading age was 10.5 years and his mathematics level was above the national average for his age. His teacher also reported that he had a group of friends with whom he socialised in the playground without any reported disruptions.

During reading and mathematics time, the classroom teacher worked with a group of children while the other children were expected to work or play quietly at the different reading or mathematics activities provided in the classroom. The classroom teacher had observed that Andy rarely started or followed through on an activity that was not prescribed by her. The teacher also reported that Andy often appeared to be involved in distracting others from their chosen tasks.

Andy scored 109 on the Canterbury Social Development Scale. Church et al. (2006) reports that children who score less than 105 out of a possible 150 are at risk of antisocial development.

#### Functional Assessment

In order to determine if Andy was on-task at an equivalent frequency to his peers, the classroom teacher made a number of interval recordings. The teacher observed and recorded Andy's on/off-task behaviour and a variety of other children during different times of the day at different activities. Her records showed that his on-task behaviour ranged from 0 to 70 per cent when working in a group situation during self-selected reading and mathematics. His peers were on-task in the same situations from 70 to 100 per cent of the time. Interval recording of

Andy during independent activities set by the classroom teacher showed a range of 60 to 99 per cent on task behaviour. The results suggested that Andy was finding it difficult to stay on task when working with a group on a self selected activity but was able to stay on-task when assigned work to do on his own by the teacher.

The teacher then did some narrative observations of Andy during self-selected reading and mathematics. These showed that Andy struggled to engage in group activities and often lost interest soon after he began. He then distracted others from their chosen activities. In order to determine how often Andy displayed antisocial behaviour and how his peers reacted to it, the writer made observations of Andy using the Antisocial Development Screen (Church et al., 2006). Child behaviour was coded, as described in Chapter 2, as an initiation or response that is either socially neutral, positive or negative. The classroom's and teacher's response to Andy's behaviour was coded as either a positive or negative response. These were made during self-selected group activities in reading and mathematics sessions. Andy appeared to struggle particularly with playing board games and often cheated by throwing the dice out of turn, re-rolling to get a higher number, changing the rules of the game to suit himself, or leaving the game entirely if he was not winning. His peers did not seem to react to his cheating or his attempts to distract them from their activities.

The ADS observations were made during both self-selected reading and mathematics activities. During self-selected reading, Andy displayed positive or neutral social interactions 34 per cent of the time. Out of the remaining time, in which he displayed negative social interactions, his peers responded positively 98 per cent of the time. During self-selected mathematics, Andy displayed positive or neutral social interactions 61 per cent of the time and in the remainder of the time he had a positive response from his peers 69 per cent of the time. These results indicated that Andy's negative social interactions were often responded to with positive social reactions from his peers. Andy's most common negative social interactions were

cheating at a game and initiating and continuing negative verbal interactions. It was observed that the other children with whom Andy was playing either did not recognise or see his cheating or did not know how to respond to it.

Andy appeared to respond well to direction from the teacher and worked well on his own, but struggled to initiate and maintain self-selected group activities with his peers. He engaged in antisocial behaviour like cheating and arguments rather than risk losing a game. With Andy's antisocial behaviour being continually reinforced by his peers it seemed likely that it would continue.

The two hypotheses were that Andy was capable of being on-task during self-selected group activities in reading and mathematics sessions and that his antisocial behaviour was being reinforced by his peers.

### Intervention

#### *Goals Set by the Classroom Teacher*

The teacher set Andy the following goals. During a reading or mathematics lesson with self-selected group activities, Andy will start looking for an activity within 5 seconds, use kind and quiet words, use kind hands and feet, play fair, and tidy up for each session over three weeks.

The teacher defined off task behaviour to include delaying the start of an activity, cheating while playing a game, inappropriate negative verbal or physical exchanges and not packing up the equipment correctly at the end of the session. Cheating was defined as looking at others' cards, rolling the dice twice in a row, not waiting to take turns, controlling the game in some way in order to win or giving up before completion to avoid losing. On-task behaviour was defined as Andy achieving the goal set by his classroom teacher.

### *Recording Procedures*

The teacher and the writer made recordings at 5 second intervals for 20 minutes during self-selected reading and mathematics sessions to record Andy's on/off task behaviour.

Observations were mainly done independently by the classroom teacher or the writer over the four weeks, but 20 per cent of the recordings across all phases of the case experiment were done simultaneously by both the classroom teacher and the writer to assess inter-observer agreement. Inter-rater agreement was calculated by dividing the total number of interval agreements by the total number of intervals and multiplying by 100. The intervals were signalled to the observers by an automated beep generated by the classroom computer through ear phones. When both observers were recording simultaneously the computer generated signal was delivered through the computer speakers. Initially these signals proved a bit of a distraction for the children in the classroom, but they quickly came to be ignored.

Observations were made on Monday, Tuesday, Wednesday and Thursday for reading sessions and on Monday, Tuesday, Thursday and Friday for mathematics sessions. Mean inter-rater reliability was 96 per cent (range 96 to 97 per cent) for on-task behaviour during self-selected reading and 96 per cent (range 87 to 100 per cent) for on-task behaviour during self-selected mathematics activities.

### *Intervention Strategies Selected by the Classroom Teacher*

The teacher decided to use a self- and peer-monitoring programme with fixed ratio reinforcement in order to test the hypotheses (a) that Andy's off-task behaviour was due to his choosing not to work and (b) that his negative social behaviour was being reinforced by his peers. The intervention included an environmental change and a self-management contract. The environmental change was that the other students in the class were made aware of Andy's contract and agreed to support Andy when working as part of his group during the self-selected activity sessions. The classroom teacher presented a small teaching session that involved

discussing the different aspects of fair play, what it looks like, what it does not look like and how to respond to children who are not behaving appropriately. The self-management contract required Andy, along with his peers and the classroom teacher, to evaluate his behaviour at the end of each session. Twice a day, four times a week, the classroom teacher gathered all of the children together on the mat and asked first Andy and then his classmates if he had achieved the five goals that he had been set.

The evaluation consisted of a laminated printed hand on which smiley faces could be drawn to indicate that one of the five goals (one for each finger) had been met. If one of the goals had not been consistently achieved throughout the session then no smiley face was drawn on that finger. At the end of the evaluation, Andy had a possible total of five smiley faces drawn on the hand. A separate evaluation took place for reading and for mathematics, so there was a total of eight opportunities over the week for Andy's achievement of his goals to be assessed. The number of smiley faces was recorded after each session on a weekly tally sheet (Appendix 3). In Intervention 1, if Andy had reached the required number of smiley faces for that session he was rewarded. The reward was given immediately. The reward was chosen by Andy from a list that included 10 minutes on the computer or in the playground with a friend, 3 stickers on his sticker chart, or time in Room 5 where his favourite teacher taught. The sticker chart was part of a pre-existing token economy programme within the classroom where 20 stickers resulted in a prize from 'the box'.

### *Intervention Procedures*

*Week 1 – Baseline.* Andy was observed during self-selected reading and mathematics activities before an intervention was implemented in order to get a baseline of his behaviour during these times. Andy was not informed that he was being observed for this purpose.



*Week 2 – Intervention 1.* The criterion in Intervention 1 was that Andy had to achieve three out of the potential 5 smiley faces for reading and/or mathematics in order to receive an immediate reward from his selection.

*Week 3 - Intervention 2.* The criterion in Intervention 2 was that Andy had to achieve 8 out of a potential 10 smiley faces for both reading and mathematics combined in order to receive an immediate reward from his selection.

*Week 4 - Intervention 3.* The criterion in Intervention 3 was that Andy had to achieve 8 out of a potential 10 smiley faces for reading and mathematics combined over a whole week in order to receive the reward of going to QEII (a water fun park) with a group of pupils chosen for their focus on school work over the term.

*Follow-Up.* A follow-up was completed two weeks later following the Term 3 school break. During this follow-up, the self-monitoring procedure was withdrawn and the participant was just reminded once at the start of the week to continue to follow his five goals.

## Results

The results of the baseline recordings were consistent with the hypothesis that Andy was off-task during a 20 minute self-selected reading or math session, with scores ranging from 40 to 50 per cent on-task behaviour during reading and 38 to 66 per cent during mathematics.

### *Results of Andy's Self- and Class-Monitoring*

As can be seen from Table 2, Andy achieved the set criteria at every session and received a total of 8 rewards during Intervention 1.

During Week 3 (Intervention 2) Andy achieved the set criteria and received a total of 4 rewards. ( The scores from Wednesday and Friday were added together to achieve a score out of 10, as only one activity was done on each of these days.)

*Table 2. Reward Criteria and Points Achieved by Andy in Weeks 2 to 4*

| <i>Week</i> | <i>Reward Criteria</i>  | <i>Monday</i> | <i>Tuesday</i> | <i>Wednesday</i> | <i>Thursday</i> | <i>Friday</i> | <i>Results</i> |
|-------------|-------------------------|---------------|----------------|------------------|-----------------|---------------|----------------|
| 2           | 3/5 per reading session | 3/5           | 4/5            | 3/5              | 3/5             |               | Achieved       |
|             | 3/5 per maths session   | 4/5           | 4/5            |                  | 3/5             | 5/5           | Achieved       |
| 3           | 8/10 per day            | 9/10          | 10/10          | 5/5              | 10/10           | 4/5           | Achieved       |
| 4           | 32/40 per week          | 10/10         | 9/10           | 5/5              | 10/10           | 4/5           | Achieved       |

During week 4 (Intervention 3) Andy achieved the set criteria and received a total of 38 points out of a potential of 40.

During these sessions the classroom teacher and the writer continued to complete interval recordings of Andy's on and off-task behaviour. As can be seen in Figure 1, Andy's on-task behaviour in reading increased from 45 per cent during baseline to over 90 per cent during Interventions 2 and 3. Additionally, Andy's on-task behaviour in mathematics increased from 38 per cent during baseline to over 99 per cent during Interventions 2 and 3.

During the Follow-Up week, the set criteria of on-task behaviour above 80 per cent in both reading and mathematics was maintained over the two sessions measured.

The Antisocial Development Screen observation recorded during self selected sessions at this time showed that Andy displayed positive or neutral social interactions 85 per cent of the time in reading, and 86 per cent of the time in mathematics.

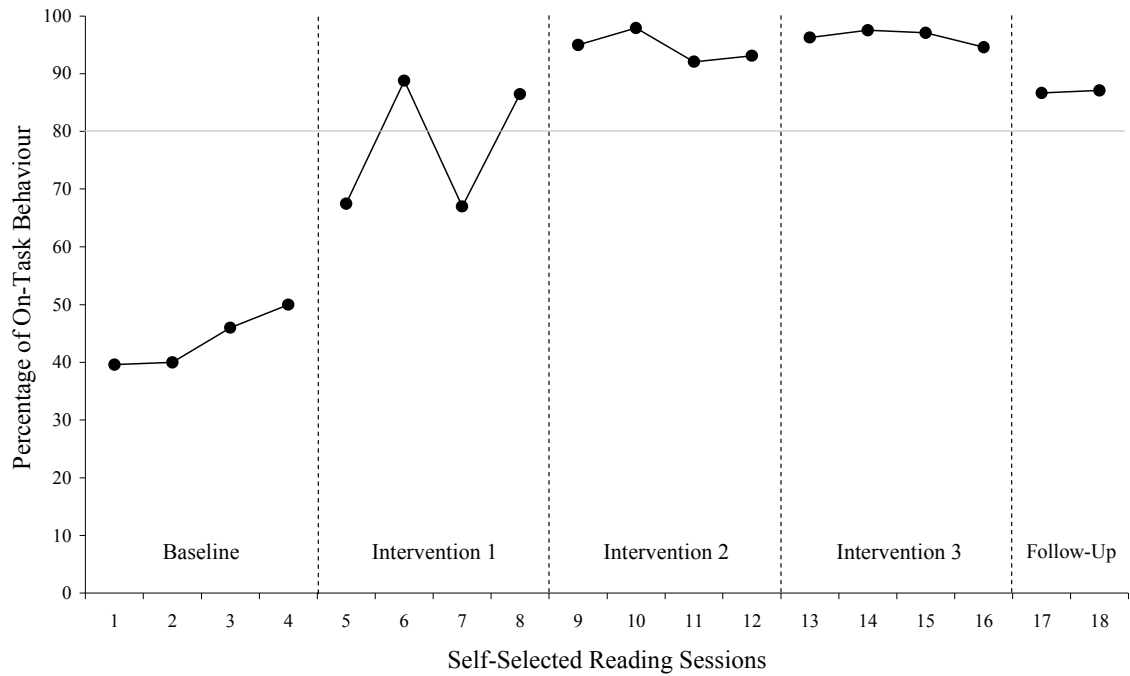


Figure 1. Percentage of Andy's on-task behaviour during self-selected reading activities.

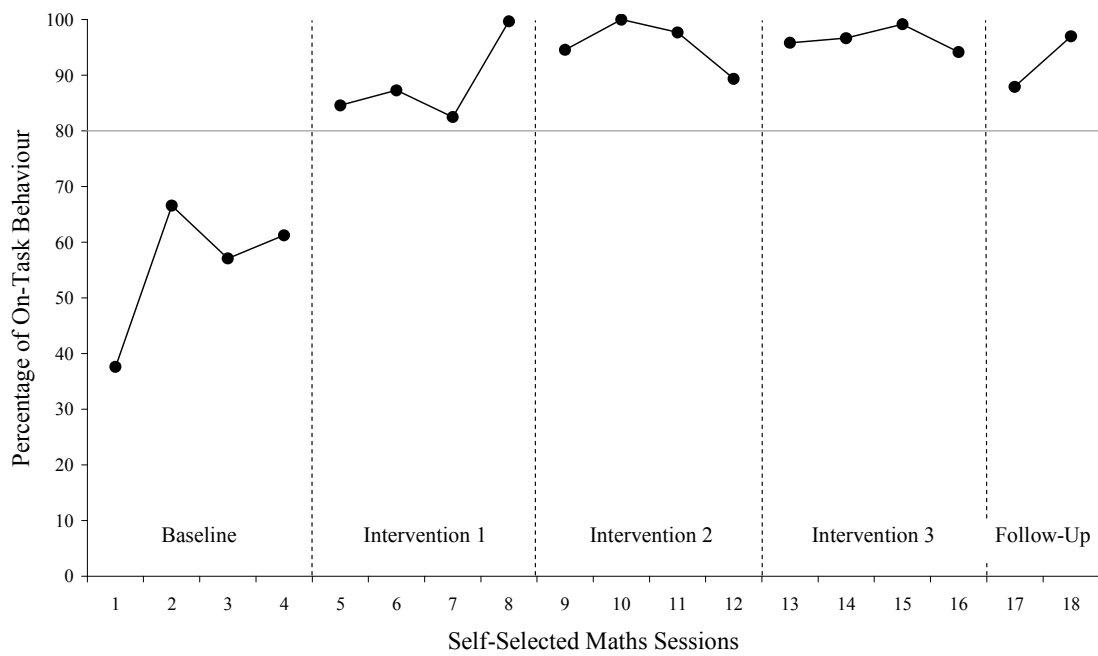


Figure 2. Percentage of Andy's on task behaviour during self selected maths activities.

Andy's behaviour in Week 1 (Baseline) was off-task and antisocial towards his peers. During Week 2 and Week 3 (Intervention 1 to 3) there was an increase in his on-task behaviour and in his positive social behaviour towards the other children. Only twice during Week 2 did Andy's behaviour drop below the 80 per cent on-task rate that was required and only during reading. The second occasion was when the release teacher was teaching the classroom on Wednesday morning.

The teacher completed Weekly Reflection sheets for Interventions 1 to 3 (Weeks 2 to 4). On all three Weekly Reflection sheets for the first question, the teacher listed 5 minutes at the end of each session to write up the contract as the extra work that she had done. Additionally, the teacher added on the first Weekly Reflection sheet that she had spent 1 hour creating a contract and 45 minutes setting it up with the children and running a social skills session. The second question inquired if the teacher had received any assistance in implementing the intervention to which she said "Another classroom teacher has been part of the reward system" as Andy had chosen to go to another classroom as one of his rewards. For the third question, asking the teacher to list any additional supports that would have assisted her in implementing the intervention, she wrote on the first Weekly Reflection sheet "Perhaps someone to complete 2 or 3 sessions on cheating/fair play, positive interactions etc.". No Weekly Reflection sheets were completed for the Baseline Phase (Week 1).

## Discussion

The aim of Case Experiment 1 was for the teacher to implement an intervention that would improve Andy's engagement with classroom activities. The intervention was designed by the teacher and was based on a functional assessment undertaken by the teacher.

The information that was collected through the functional assessment by both the teacher and the writer indicated a number of things about Andy's off-task behaviour during group self-

selected reading and mathematics activity times. First, the level at which Andy was performing in both reading and mathematics indicated that he did not have an academic skill deficit.

Second, his ongoing good relations with his peer group during playground time indicated that he did not have a social skill deficit. Andy's ability to focus during independent activities set by the classroom teacher indicated that he could attend to classroom activities when necessary.

Descriptive measures indicated additionally that Andy was reluctant to play with other children unless he was winning the game that was being played. This meant that Andy either refused to play with the other children or else cheated, and it was his cheating that caused the arguments noticed by the teacher.

The intervention introduced by the teacher demonstrated that Andy was capable of staying on-task during self-selected group activities in reading and mathematics sessions when this was positively reinforced, and that he was also capable of not cheating when playing by the rules was reinforced. The teacher faded out the intervention after three weeks. The changes were maintained the first week after the positive reinforcement was removed and the teacher had ceased to check in with the other children.

The intervention implemented by the teacher was successful, indicating that the functional assessment had been correct in identifying that Andy was capable of being on task and that his cheating was being maintained by his peers not acknowledging it. The Weekly Reflection sheets show that apart from the first week, this intervention took approximately 5 minutes per session to complete, or 40 minutes over the whole week. This amount of time spent on one intervention for one child is excessive when taking into consideration how many other children may require extra assistance within the classroom. Unfortunately a Weekly Reflection sheet was not completed prior to the Baseline Phase (Week 1) as it was during this week that the teacher had spent a lot of time collecting observation data at different times of the day and during different activities. The teacher also collected interval recordings of Andy during Weeks

1 to 4 but as this was a requirement of her Masters course, these were not recorded on the Reflection Sheet.

## CHAPTER 4

### CASE EXPERIMENT 2: KYLE AND TIM

#### Subjects and Setting

Kyle and Tim were boys aged 6 years and 8 months and 7 years and 3 months respectively. They were both identified by the classroom teacher as children who displayed antisocial behaviour on a fairly regular basis. The classroom teacher explained that Kyle was fine in her classroom and mainly displayed antisocial behaviour in the playground, where he often played with his older brother and his older brother's friends. The teacher described his academic work as being above average. Tim was described as a child who constantly called out, was off task and could be violent towards his peers in the classroom. The teacher indicated that she had tried a number of interventions with both to improve their behaviour but that nothing seemed to work. A set of observations were therefore planned to assess the specific nature of the antisocial behaviour, its frequency of occurrence and its consequences.

Kyle obtained a score of 87 on the Social Development Scale and Tim obtained a score of 70. Such scores are usually indicative of antisocial development.

#### Functional Assessment

The Antisocial Development Screen was used to record the positive, neutral and negative responses of each child to other children and the classroom teacher. These observations were undertaken in the classroom. Observations alternated between Kyle and Tim: one was observed for 10 seconds and his behaviour recorded for five seconds, and then the other child was observed and recorded in the same way. The aim was to complete observations for 30 minutes.

Child behaviour was coded, as described in Chapter 2, as an initiation or response that is either socially neutral, positive or negative. The classroom teacher's response to Kyle's and

Tim's behaviour was coded as either a positive or negative response. The observations were made at different times and during a range of classroom activities.

### *Observations*

At the teacher's request the writer observed Kyle and Tim for six days in preparation for her implementing a functional analysis and intervention. The first observation of social interaction was undertaken while the children were on the mat with the classroom teacher and then moved to their desks. Kyle was observed for approximately one hour while engaged first in a solo activity at his desk and then in a self-selected activity on the mat. The classroom teacher awarded him a sticker for being the first child on task. Within a few minutes, Kyle started to make some guttural noises, and when the children sitting opposite him protested he repeated them a number of times. The classroom teacher asked the class to work more quietly, and less than a minute after this Kyle started singing out loud. The classroom teacher then clapped, requiring the children to copy her, and even when the pattern was repeated Kyle did not respond. He spent the next 5 to 10 minutes ignoring his own work and reading over the shoulders of two girls. When the children were told they could move to the mat and choose an activity, Kyle struggled to choose one. Eventually he settled at the puzzles and worked for 10 minutes consistently, receiving another sticker.

Tim was observed for approximately 50 minutes while doing an individual art project. The task involved sitting at a table with four others and making a hand puppet. The children were allowed to talk quietly in their groups while completing their project. Tim was friendly in his conversation and showed initiative in helping others when they were struggling with their puppets. He had no trouble sharing the resources with other children. When the teacher asked for everything to be packed up Tim did not appear to hear, but when she repeated her instructions he started immediately.



The record of on-task and off-task behaviour revealed that Kyle had been on task 70 per cent of the time and Tim 80 per cent of the time. As the teacher's behaviour was going to be one of the variables tested, it was not appropriate that she be involved in the collection of further data for the functional assessment.

*The first joint ADS observation - Writing on mat with classroom teacher and then at desks.* During this observation Kyle was off-task for almost the entire 47 minutes and wrote only four lines for his story. His antisocial behaviour included hitting other children, climbing under the desks and looking up girls' skirts, and not complying with the classroom teacher's requests. He received two negative verbal responses from the classroom teacher. Tim was on-task for the duration of the 47 minutes and completed over one page of written work for his story. His antisocial behaviour consisted of non-compliance with regard to continually sitting on his knees instead of his bottom as requested by the teacher while on the mat and at his desk.

During this observation, Kyle engaged in antisocial behaviour during 32 per cent of intervals and the classroom teacher responded negatively to this behaviour 13 per cent of the time. Tim engaged in antisocial behaviour during 8.5 per cent of intervals and the classroom teacher responded to antisocial behaviour on 75 per cent of occasions.

*Second ADS observation – Maths on mat with classroom teacher and then activity at desk.* As shown in Table 3, Kyle displayed no antisocial behaviour during the 22 minutes of mathematics that the class spent on the mat and then at their desks. Tim engaged in antisocial behaviour in 2.3 per cent of intervals. This involved talking once when the teacher had requested silence. This was not responded to by the teacher.

*Third ADS observation - Reading on mat with classroom teacher.* Both children displayed very little antisocial behaviour. Kyle was asked by the teacher to sit still and immediately wriggled, and Tim pulled a face at another child. Neither received a reprimand.

*Fourth ADS observation – Reading on mat with classroom teacher and then self-selected reading activity.* Only one negative verbal comment said by Tim was observed. This was not responded to by the teacher.

*Fifth ADS observation – Reading self selected activity and then on the mat with the classroom teacher for a story.* During the reading activity Tim had completed a jigsaw with other children and wanted to show the teacher. The class had been asked several times to tidy up and when other children began to rip up the jigsaw, Tim became slightly frantic that the classroom teacher had not seen it. Kyle was non-compliant in that he did not help with the tidying up.

*Sixth ADS observation – Phonics on mat with class teacher and then writing at desks.* No antisocial behaviour from Tim was observed, but Kyle was occasionally observed as showing antisocial behaviour. Kyle did almost no writing again, and when he finished and went to get a reading book as supposedly finished, the classroom teacher asked to see his writing book and told him to do more. He pretended to do so for a while, and then went back to reading books in the library corner. At one point he was also banging his hips hard into the child in front of him when they were released from the mat to go and get their writing books. The teacher responded to his antisocial behaviour with a negative response on 44 per cent of occasions.

## Results and Discussion

Direct observations of both Kyle's and Tim's classroom performance across a range of activities failed to confirm the teacher's belief that both boys frequently engaged in unacceptable behaviour and that Tim engaged in antisocial behaviour more often than Kyle.

The results relevant to the teachers concerns are given in Table 3. These include the total percentage of time each child spent engaging in antisocial behaviour and the percentage of occasions that this was responded to negatively or positively by the classroom teacher.

*Table 3. The Percentage of Kyle's and Tim's Antisocial Behaviour and the Percentage of Negative Responses from the Classroom Teacher*

| Observation | Observation length | Kyle                 |                                | Tim                  |                                |
|-------------|--------------------|----------------------|--------------------------------|----------------------|--------------------------------|
|             |                    | Antisocial behaviour | Negative response from teacher | Antisocial behaviour | Negative response from teacher |
| 1           | 47mins             | 31.91%               | 13.33%                         | 8.51%                | 75%                            |
| 2           | 22mins             | 0%                   |                                | 2.27%                | 0%                             |
| 3           | 19mins             | 2.63%                | 0%                             | 2.63%                | 0%                             |
| 4           | 30mins             | 0%                   |                                | 1.72%                | 0%                             |
| 5           | 13mins             | 38.5%                | 0%                             | 15.38%               | 50%                            |
| 6           | 30mins             | 15%                  | 44.44%                         | 0%                   |                                |

During the first observation Kyle displayed more antisocial behaviour than Tim. More importantly, this was the only time that either Kyle or Tim displayed a significant amount of antisocial behaviour. This led to the conclusion that neither a functional analysis nor an intervention was warranted in this case. The writer did, however show the teacher the observational results which indicated that her responses to Tim's behaviour were more often negative than were her responses to Kyle's behaviour. When this finding was presented to the teacher, she was surprised at the difference between her reactions to the two boys and determined to give Tim more positive attention.

The teacher did not complete the Weekly Reflection sheets as she was not involved in the functional assessment and there was no intervention. The only additional work that she was involved in for this case experiment was that she completed the Social Development Scale form for both boys, a task which she said took minimal time.

## CHAPTER 5

### CASE EXPERIMENTS 3: ERICK AND JACK

#### Subjects and Setting

The classroom teacher stated that she believed that a number of the Year 2 children in her class were behind their peers in learning to read. These children were given a Running Record Test in order to ascertain their prose reading level. Two children were significantly below the norm for their age. Both these children were in the lowest reading group of the class and according to the teacher struggled to make progress. Erick and Jack were aged 6 years and 11 months and 6 years and 5 months. All testing and subsequent interventions took place in an empty classroom or office, the staff room or the foyer between Rooms 1 and 2.

#### Functional Assessment

To get an overall picture of both Erick's and Jack's reading abilities, an assessment of the component skills required for reading were required. The teacher was unsure how to go about this so the writer got together the necessary resources and completed them as it was not possible for the teacher to do them. Each boy's oral language was listened to while they were talking to their peers and to the teacher in the classroom. Phonemic segmentation skills were tested using Williams Phonemic Segmentation Test (Williams, 2002) (Appendix 4). Decoding fluency was tested using the Canterbury Decoding Fluency Test (Zintl, 2005) (Appendix 5) and level of achievement in learning to read was tested using the PM Benchmark reading test (Nelley & Smith, 2000).

Williams' Phonemic Segmentation Test was administered to the participants to assess phonemic awareness as part of the screening procedure. This test is an adaptation of the phonemic segmentation test in the Queensland Inventory of Literacy, a standardised Australian

test which assesses phonological awareness in school aged children (Dodd, Holm, Oerlemans & McCormick, 1996, as cited in Williams, 2002). The test includes 16 words, of which 7 are pseudowords that are presented orally to the participant. The participant then repeats the word back to the assessor, emphasising its specific phonemic segments. There are a total of 60 segments for all 16 words and the final score is the total number out of 60 segments that are correctly reproduced. In this instance, the child was given the option of ‘roboting’ the sounds by moving their arms to each sound segment. The assessor illustrated this by ‘roboting’ the separate segments of the word “it”. The participants were then asked to ‘robot’ five practice items and, if required, further practice was provided. When the participant had understood the requirements of the test, the assessor presented the 16 test words.

The Canterbury Decoding Fluency Test was used to measure the participants’ decoding fluency. The test is a one page document that has 45 single syllable words repeated twice, in a different order, to make a total of 90 words. The 45 words contain the most common graphemes in the English language. If a word contains more than one grapheme, the specific grapheme that is being tested is underlined in order to be clearly identified by the assessor. The participants are required to read out loud as many of the words as they can in one minute, and they are scored according to the number of correctly pronounced graphemes. Each participant was told to say “pass” and to carry on with the next word if he or she did not recognise a word. On the original Canterbury Decoding Fluency Test, the typed words are small and so the words were re-typed in the same formation but in larger font to make it easier for the children to read (Appendix 6).

The PM Benchmark programme consists of two kits, each containing 30 prose reading books that represent 30 progressive reading levels (Nelley & Smith, 2000). The books are read aloud by the participant and the administrator marks words as correct or incorrect. At the end of the book the participant is asked a small number of questions about the content to check

their comprehension. The PM Benchmark kit provides percentiles and age equivalent scores for reading accuracy and comprehension.

The first running record was conducted at the level suggested by the class teacher. If the participant was able to read at this level with at least 91% accuracy then this level was deemed to be correct for the participant. If the participant read with less than 91% accuracy then the next level down was attempted. If the child read with above 94 per cent accuracy then the level above was attempted. If between 91-94 per cent was scored at any level then the level with the score above 94 per cent was selected. Each level is associated with a different set of reading books that are distinguished by colour.

Narrative observations were also made of the two boys while they were reading in the classroom. These observations consisted of watching them read books assigned by the teacher and read books of their own selection from the library.

#### *Assessment Results*

The oral language of both Erick and Jack was satisfactory, and each appeared to have sufficient vocabulary to communicate his needs and wants within the classroom setting. Both children scored above the required 30 correct responses on the Phonemic Segmentation Test; however their Decoding Fluency Scores were well below that of the 60 per minute required for satisfactory progress in learning to read. These results are displayed in Table 4.

*Table 4. Results of the Assessment of Component Reading Skills and Reading Levels for Erick and Jack*

|       | <i>Phonemic segmentation<br/>score</i> | <i>Decoding fluency score<br/>correct responses/min</i> | <i>PM Running Record<br/>level</i> |
|-------|--|---|------------------------------------|
| Erick | 50/60                                  | 10/min  | 11                                 |
| Jack  | 41/60                                  | 15/min  | 7                                  |

The results of the narrative observations were that when the two boys were reading books assigned by the teacher the boys completed reading the book almost without distraction. However, when reading a book of their own selection from the library, they would rarely finish it and were easily distracted. The reading books assigned by the teacher were at the right level of difficulty for the boys.

### Intervention

Following a discussion of possible interventions, the classroom teacher decided to use peer tutors to provide practice in decoding and to build improved decoding fluency. Peer tutoring was selected as she herself did not have the time to implement the intervention. Peer tutoring is best used to promote fluency rather than teaching new skills and has been found to benefit not only the tutee but also the tutor through increased practice and self-confidence (Mitchell, 2008). Peer tutoring requires the tutors to be willing, well trained, motivated and supervised. The teacher chose three peer tutors from the class, one for each of the participants, and an additional one in case the others were not available. The peer tutors were from the same class, of above average reading ability and were judged by the teacher to be responsible. The three children selected as peer tutors were trained to use the Pause, Prompt, Praise tutoring procedure (Glynn, 1995) and to administer the fluency tests.

It was decided by the teacher and the writer that the intervention would be terminated either at the end of the academic year or when the participants reached a decoding fluency of 60 correct graphemes per minute on the Decoding Fluency Test. This is the number determined by Williams (2002) to be the minimum level required to be a proficient reader.



### *Recording Procedure*

The Canterbury Decoding Fluency Test was used to assess progress during the intervention. The starting point was varied every time the test was administered in order to control for any practice effect that might occur.

Timed running records were also collected once a week throughout the experiment to measure for any generalisation, from improved decoding fluency to improved prose reading fluency. The teacher was requested to administer these as per the PM Benchmark instructions with the addition of timing them.

The teacher had already assigned the children into groups for reading, and so over the nine-week intervention she would decide whether or not to change their reading level based on the results of the running record and their current reading ability relative to that of others in their group. The reading books in these groups were the ones from which the participants' prose reading measurements were taken. The measurements were taken by timing reading for one minute and then counting the number of correct words.

### *Teaching Materials*

The 60 words used for the practice materials were those used by Zintl (2005) and contained fifty commonly occurring graphemes in initial, medial and terminal positions. The 60 words were split into two matched lists (List A and List B). Each of the two lists contained each grapheme between one and three times in the initial or medial position. Each list was then divided into two matched subsets of 15 words. These lists are labelled A1, A2, B1 and B2 (see Appendix 7). They constituted the four practice lists. Each set of 15 words was presented in black ink on individual flashcards 4 x 16 cm and put on a ring (see Appendix 8). The peer tutors were also provided with a form on which to record the date, the number of words practised, the time it took to run through them at speed and the total number of practice words correct.

### *Teaching Procedures*

The training of the peer tutors and participants in what was required during their practice sessions together took approximately 45 minutes.

First, the writer took the peer tutors through the first 15 flash cards using the Pause, Prompt, Praise method (Glynn, 1995). This method involves waiting for the child to attempt the unknown word, then prompting them by sounding the first syllable and then praising them when they say the word. If a word was unknown or not understood, they were taught what it was and meant and then the word was practised. When the words were learnt and understood the peer tutors were asked to progress to a time trial and read the words as fast as they could, while the writer flipped the cards and timed them. They were to say pass if they came to a word that they did not understand. The two primary peer tutors were asked to repeat the above procedure with their assigned tutee and the third peer tutor with the writer. The peer tutors repeated the procedure until they were able to perform it correctly.

### *Practice Procedures*

The peer tutors were instructed to follow the above instructions with the first set of 15 flashcards, labelled Week 1, every day for the upcoming week. The peer tutors recorded on a table how long it took the tutee to read the 15 words. Each subsequent week for the following three weeks they used the corresponding set from the four sets of flashcards. They were told that they had permission to leave the classroom and do this in the foyer between Room 1 and 2 every day during reading time.

Two to four times a week the writer travelled to the school to observe the process, and twice a week administered the Canterbury Decoding Fluency Test and measured the participants' prose reading fluency on their current reading book. On the last set one of the participants achieved 15 words in 15 seconds (60 words per minute) the criterion set by Zintl (2005) to determine fluency. However, neither participant reached the required 60 graphemes

per minute on the Decoding Fluency Test during the five weeks of testing. In Week 4, the participants were tested only twice by their peer tutors so they were tested again on the same 15 words in Week 5 to ensure that there had been at least three practices.

Following the initial five weeks, the writer went into the school three times a week for four weeks to carry on the intervention instead of the peer tutors. The teacher was unable to provide the necessary supervision to ensure that the practice sessions were occurring at least three times a week. Additionally, the peer tutors were not able to provide the necessary intensity during the practice time. During these four weeks, all 60 words were laid out on a table and any words that the participant was unsure of, or had got wrong the previous time, were practised. The participant was then instructed to read the words as fast as he could and to say pass if he came to a word that he could not read. The Decoding Fluency Test was administered, and then the participants read their prose reading book aloud for one minute and the number of correct words was recorded. The teacher was asked to complete a running record every week of the nine week intervention. However this proved to be too difficult and the writer took over this role most weeks. Follow-up testing was not possible due to the intervention finishing one week before the end of term.

## Results

### *Erick*

As can be seen from Figures 3 and 4, Erick started with a pre-test score of 10 correct graphemes per minute on the Decoding Fluency Test, and a running record level of 11.

A pre-test was not run for prose reading or for the 60 practice words. Erick was generally easily distracted and his peer tutor occasionally had trouble getting him to focus on the day's practice words. If Erick was not sufficiently focused before he started then his performance

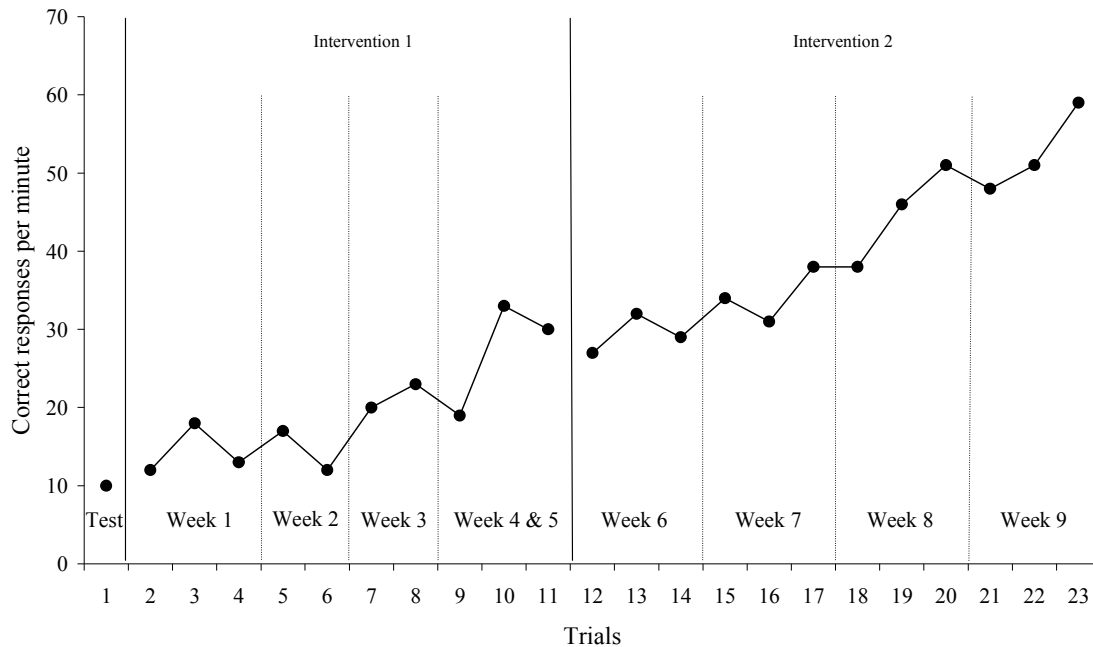
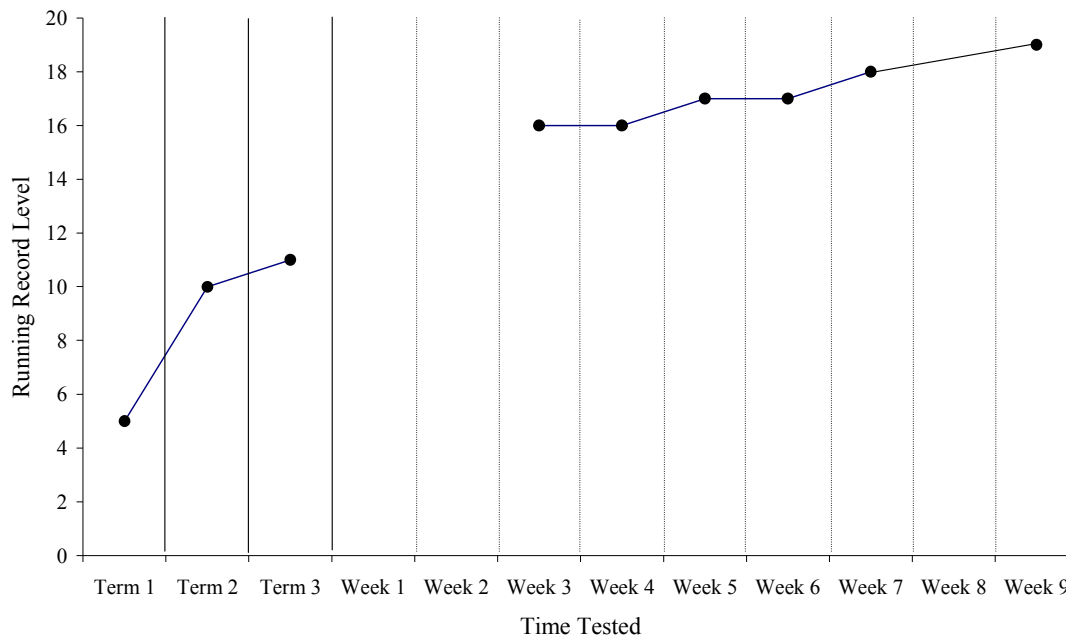


Figure 3. Number of correct responses per minute on the Decoding Fluency Test by Erick.

suffered. His peer tutor was given extra assistance and suggestions on how to get him to focus on the task at hand. Erick particularly struggled to differentiate between the words “short” and “shoot”, which were both in the second set, and when all 60 words were tested together he also confused these with the word “shirt”. These were practised several times, but were never all reproduced correctly. As can be seen from Figure 3, Erick’s highest level of decoding fluency was 33 correct graphemes per minute in the initial five weeks. This increased to 59 in the subsequent four weeks while practising with 60 words instead of 15, and with the writer instead of a peer tutor.

From running records taken by the teacher in Terms One and Two and by the writer in Term Three we know that Erick had progressed through six reading levels in 23 academic weeks. In the time between the running record in Term Three and the end of the nine week intervention Erick went up 7 levels in 14 academic weeks. This can be seen in Figure 4.



*Figure 4. Achieved running record level on the PM Benchmark test by Erick.*

In the initial five weeks of Erick's prose reading results, shown in Figure 5, not much fluency progress was made. During the subsequent four weeks there is a more stable increase in his fluency even though he had been moved up some reading levels by his teacher during this time. As was expected, Erick's number of correct practice words per minute varied every week for the first five weeks while he was learning a new set of words each week; however during the subsequent four weeks he made steady progress until he achieved 46 per minute on the last trial.

#### *Jack*

Jack was generally focused on what was asked of him and he worked hard to improve. He was initially slow and needed lots of encouragement to go faster. As can be seen from Figure 6, Jack started with a pre-test score of 15 correct responses per minute on the Decoding Fluency Test. During the first five weeks of Intervention 1 Jack's highest level of decoding fluency was 19 correct graphemes per minute. This increased to 44 in the subsequent four weeks while practising with 60 words instead of 15 and with the writer instead of a peer tutor.

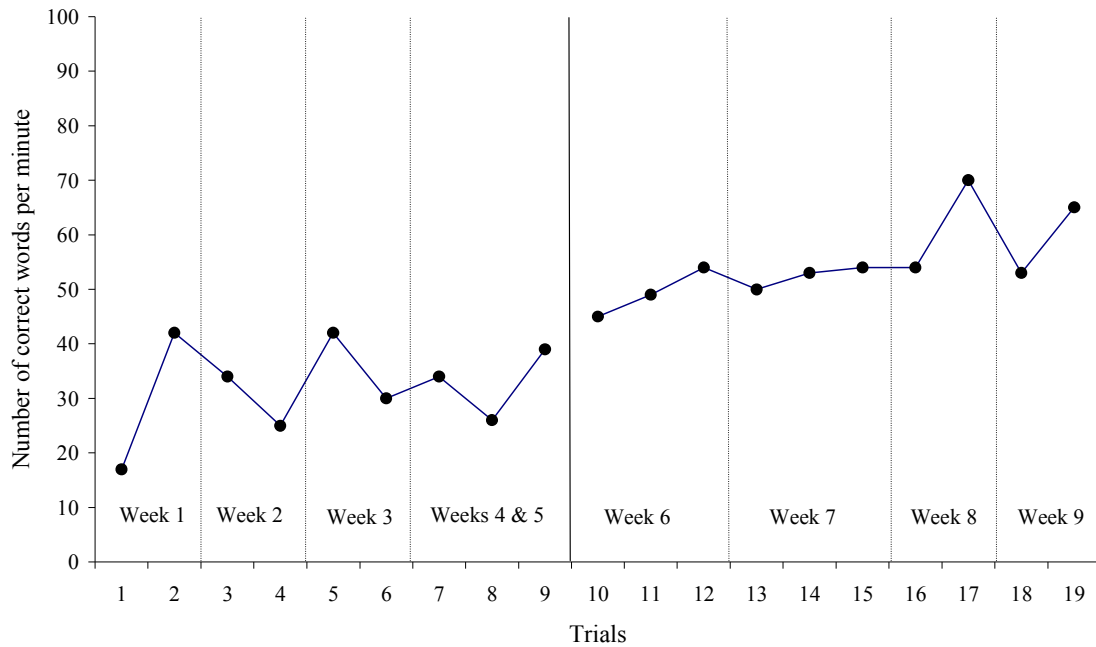


Figure 5. Number of correct words read per minute from daily reading book by Erick.

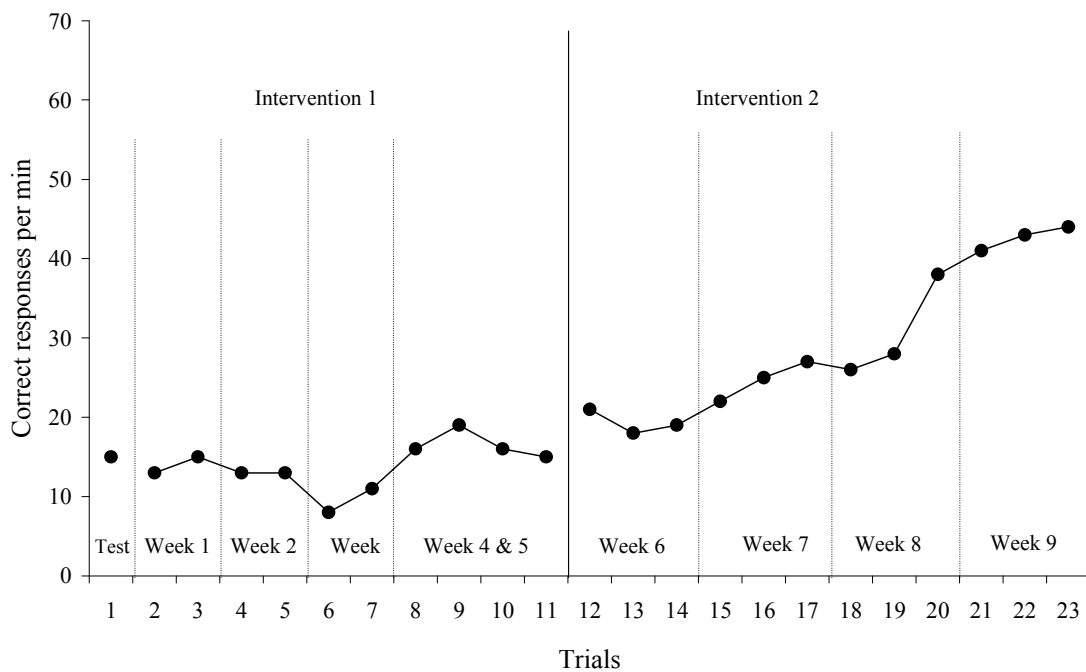
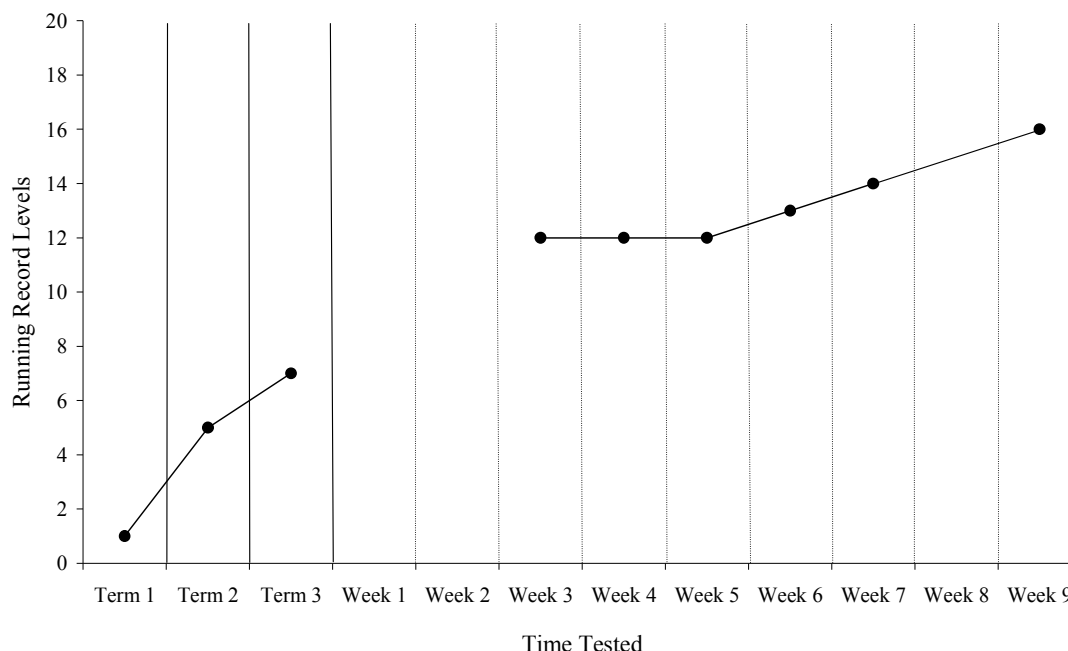


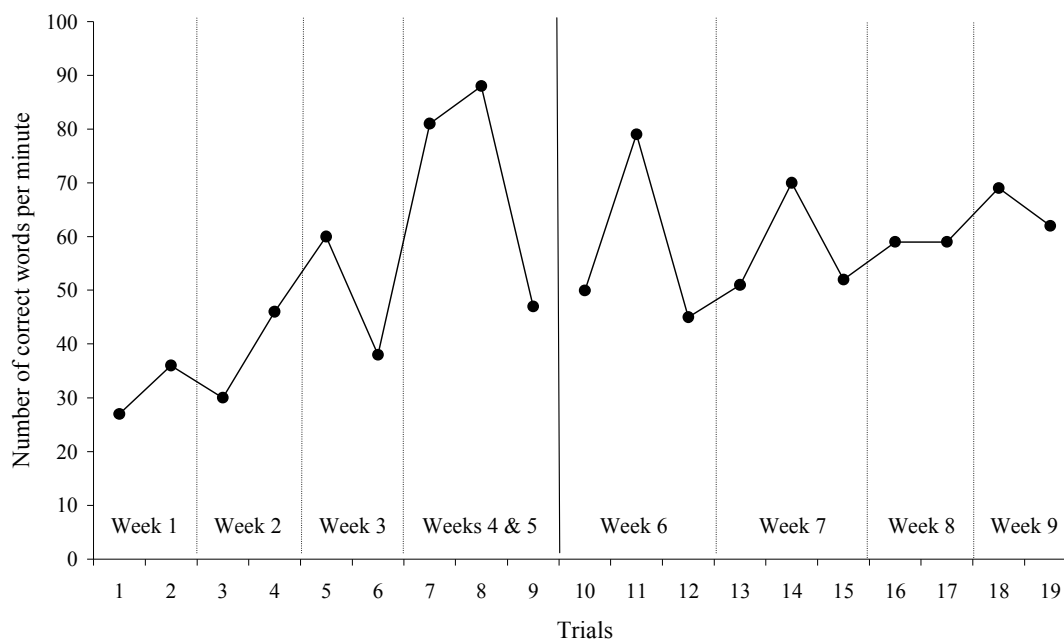
Figure 6. Number of correct responses per minute on the Decoding Fluency Test by Jack.

As can be seen from Figure 7, prior to Intervention Jack was on PM Benchmark level 7. From running records completed by the teacher in Terms One and Two and the writer in Term Three we know that Jack went up six reading levels in 23 academic weeks. Between the running record in Term Three and the end of the nine week intervention he progressed through a further 9 levels in 14 academic weeks.



*Figure 7. Achieved running record level on the PM Benchmark test by Jack.*

A pre-test was not run for prose reading or for the 60 practice words. In the first five weeks of Jack's prose reading, shown in Figure 8, performance was very variable. He achieved 60 correct words per minute in the third week and then 88 correct words per minute in the fourth week. During the subsequent four weeks, Jack's reading level increased and his fluency was less variable. However it remained above 60 correct words on the final week. Jack's number of correct practice words varied every week for the first five weeks while he was learning a different set of 15 words each week. However during the subsequent four weeks he made steady progress until he achieved 55 per minute on the last trial.



*Figure 8. Number of correct words read per minute from daily reading book by Jack.*

The teacher completed Weekly Reflection sheets for each week of Erick and Jack's intervention. On the first sheet the teacher responded that the introduction of the intervention required no extra work as the writer did the assessment required, created all the necessary resources, and completed the training of the peer tutors. On the third question the teacher stated that the running records that were completed as part of the assessment take time to complete and help in administrating these would be appreciated. All the rest of the Weekly Reflection sheets repeated that she had not had to do any extra work except for the running records which she was supposed to complete weekly but after failing to do so for Week 1 and 2, as she was too busy, the writer took over this task.

## Discussion

The aim of the intervention in Case Experiment 3 was to see if the classroom teacher could implement a functional assessment for learning difficulties and then an appropriate intervention. The teacher was unable to complete the functional assessment as she did not have



the required knowledge of what skills needed to be tested, nor the time to necessary to do the testing. The appropriate intervention for Erick's and Jack's learning difficulties was to increase the number of graphemes that the children could instantly recognise so that progress in learning to read would be accelerated as reported by Zintl (2005). The intervention selected was peer tutoring with a set of flashcards. The tutors and tutees were to leave the classroom a minimum of four times a week for 5 to 10 minutes during self-selected reading in order to practice the weekly words. The initial enthusiasm for the tutoring peers was good and in the initial week, the tutoring occurred five times. During the next three weeks, the tutoring times decreased until by the third week it was occurring just once or twice and only when the writer was there to remind the children. Otherwise both the children and the teacher forgot about doing the tutoring in the general course of the day. Erick and Jack made some progress during the first five weeks but not nearly as much progress as the children studied by Zintl (2005). Given the relatively slow progress it was decided that the writer would take over the tutoring and practice of the 60 words three times per week. Intensity is required to ensure that academic interventions are successful and the peer tutoring did not work as the intensity was not sufficient.

As a result of the increased practice during Intervention 2 accelerated progress in decoding fluency was observed in both children. The extent to which this generalized to prose reading can be seen in Figures 6 and 9. The number of words read correctly per minute by both Erick and Jack continued to increase during the final four weeks even although they were being promoted to more difficult books by the teacher. Unfortunately the teacher kept no record of when each boy was promoted from level to level. The two children appeared to be progressing through the book levels more quickly than they had during the previous term. However because the teacher was too busy, no running records were obtained during the first two weeks of the intervention and it is unclear what level they were on when they started the intervention. The decoding fluency test was one measure which was obtained throughout both phases of the

intervention and this provides the best measure of their progress. Erick's scores in the first intervention, Week 1 to Week 5 ranged from 10 to 33 correct graphemes per minute, whereas in the second phase, Week 6 to Week 9, Erick's scores ranged from 27 to 59 correct responses per minute, more than double that observed during the first intervention. Jack's scores in the first intervention, Week 1 to Week 5 ranged from 8 to 19 correct graphemes per minute, whereas in the second phase, Week 6 to Week 9, Jack's scores ranged from 18 to 44 correct responses per minute, once again more than double that observed during the first intervention.

## CHAPTER 6

### CASE EXPERIMENT 4: KATIE

#### Subject and Setting

Katie was a 7-year old girl. The classroom teacher was concerned with Katie's slow writing speed. According to the teacher, Katie was taking so long in writing each individual letter that she was completing far less work than the other children in the class, especially during writing and spelling.

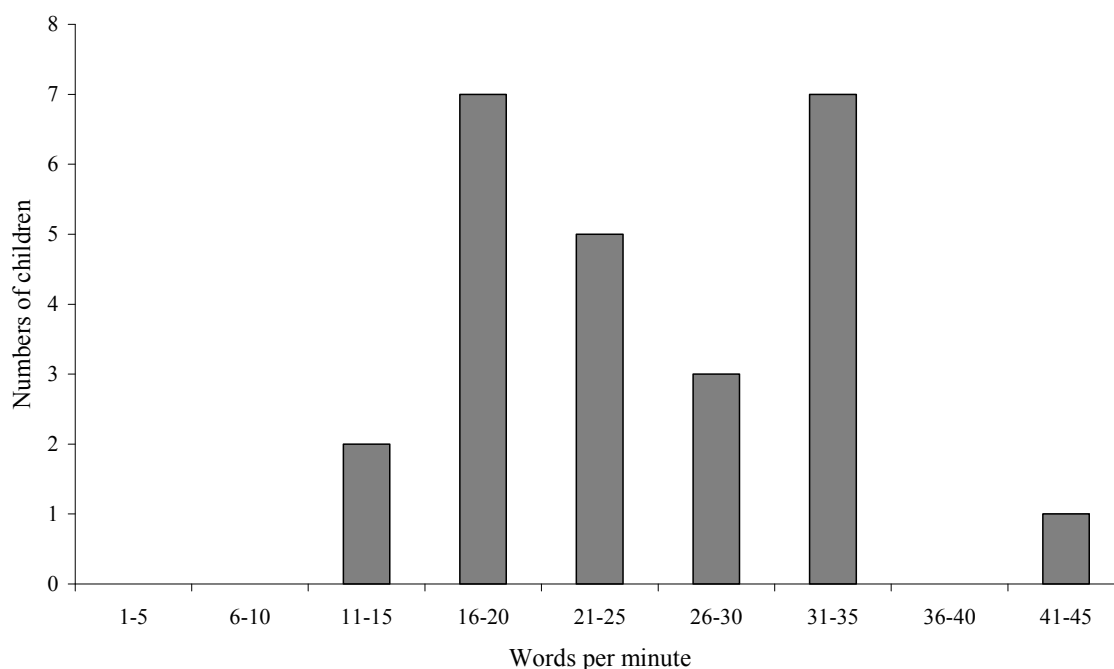
#### Functional Assessment

The writer asked the classroom teacher if she had any ideas on why Katie's writing was slow and what could help Katie to write more quickly, but she said that she did not know as she had already tried a number of interventions. These included telling Katie that her writing did not have to be neat and that she was allowed to make some spelling mistakes, and keeping her in during morning tea and lunch time to finish her story. According to the teacher, none of these interventions had had any effect in encouraging Katie to write faster. The teacher had concluded that Katie had a fine motor deficit that prevented her from writing more quickly. The fastest way to discover if a child has a performance or motivation problem is to offer them a desired reward for succeeding (Noell et al., 1997; Witt et al., 1997). The writer asked the teacher if she thought that Katie might respond to verbal encouragement to write faster or a small reward for working faster but she indicated that these were unlikely to work. When asked to identify a reward which Katie might work hard to achieve, the classroom teacher suggested anything that was purple or ballet themed.

### *Direct Observation*

The writer observed the class during a phonics lesson and found that Katie was not able to finish the writing set by the teacher during the given time. Katie's writing was always neat and legible. However, she spent much time rubbing out and rewriting individual letters. Katie also had a habit of stopping her writing to push back her hair from her face even though it was not necessary and pushing her cuffs up her arm, even if they were not in the way.

All of the children in the class were given a standard copying task consisting of a sheet of A4 paper with some text and blank lines on it, and were instructed to copy as much of the text as they could within one minute. This copying task is reproduced in Appendix 9. The results of this test are shown in Figure 9. A class average of 25 letters per minute was established from this, and this became Katie's aim. Katie's writing rate was the lowest in the class at 13 letters per minute.



*Figure 9. Number of correct letters copied per minute for a Year 2 class.*

The four most common causes of learning difficulties outlined by Daly et al. (1997) are that the child does not want to do the work, that he or she has not spent enough time practising

the missing skill, that he or she has not had enough instruction on how to perform practice tasks or that practice tasks are too difficult. The writer's observations suggested that Katie did not object to writing and did any writing task asked by the teacher immediately, so the first cause was discounted. From general observations of the classroom it appeared that there was sufficient instruction as to how to write, so the third cause was discounted. Katie was able to write very well, so it is unlikely that the tasks were too hard for her and the fourth cause was discounted. What remained was the hypothesis that Katie had not spent enough time practising writing fast and was not motivated to write fast. Katie appeared to want to keep her writing neat so she wrote slowly with lots of rewrites. This meant that she was not practising as many letters in any one writing session as her classmates.

### Intervention

The writer decided to test this hypothesis first by instructing Katie to write faster and then by motivating her by putting in some reinforcement to write faster.

#### *Baseline*

The writer tested Katie's speed at copying the alphabet and some lines from a reading book one level below her current reading level. This level was chosen to ensure that she would know the words. Katie was instructed to write as fast as she was able without worrying too much about neatness. It took Katie 2 minutes and 13 seconds to copy the alphabet (an average rate of 12 letters per minute), and she managed to write 14 letters from the reading book in 1 minute.

#### *Week 1 – Instruction Only*

During the next week, Katie met with the researcher three times and each time was encouraged to write faster when copying the alphabet and writing from the different reading books provided each time.

### *Week 2 – Incentive for Writing Faster*

The following week, Katie once again met with the writer three times and each time was encouraged to write more quickly when copying the alphabet and the text from the reading books provided. This time she was offered a reward of two purple pencils and a matching pen if she was able to achieve the required goal of 25 letters per minute.

### *Week 3 – Follow-Up*

The third week Katie met with the writer once and was encouraged again to write as fast as she could the alphabet and the original standard copying text to assess her progress.

## Results

The change in Katie's writing fluency is shown in Figures 10 and 11. As can be seen from these figures Katie's results improved during both interventions; however it was only during the incentive intervention that Katie reached the target of 25 letters per minute. During the instruction only intervention, Katie improved her writing speed when copying the alphabet letters and showed a slight initial improvement when copying prose. It is not known whether she would have reached the required target if the instruction only intervention had continued for a longer period of time. However, her writing speed increased and reached the required target of 25 letters per minute in writing both the alphabet and the prose during the incentive intervention. Katie did not like the fact that her writing was messier during these sessions; however she was pleased that she was reaching the required target. A week after the interventions were finished, Katie's progress was followed up and she wrote the alphabet at a rate of 31 letters per minute. Additionally, she copied 27 letters in 1 minute, compared with her original 13 letters per minute from the standard copying task sheet that had previously been used to establish the class average. Katie also copied 26 letters in 1 minute from the prose book from which she had originally copied only 14.

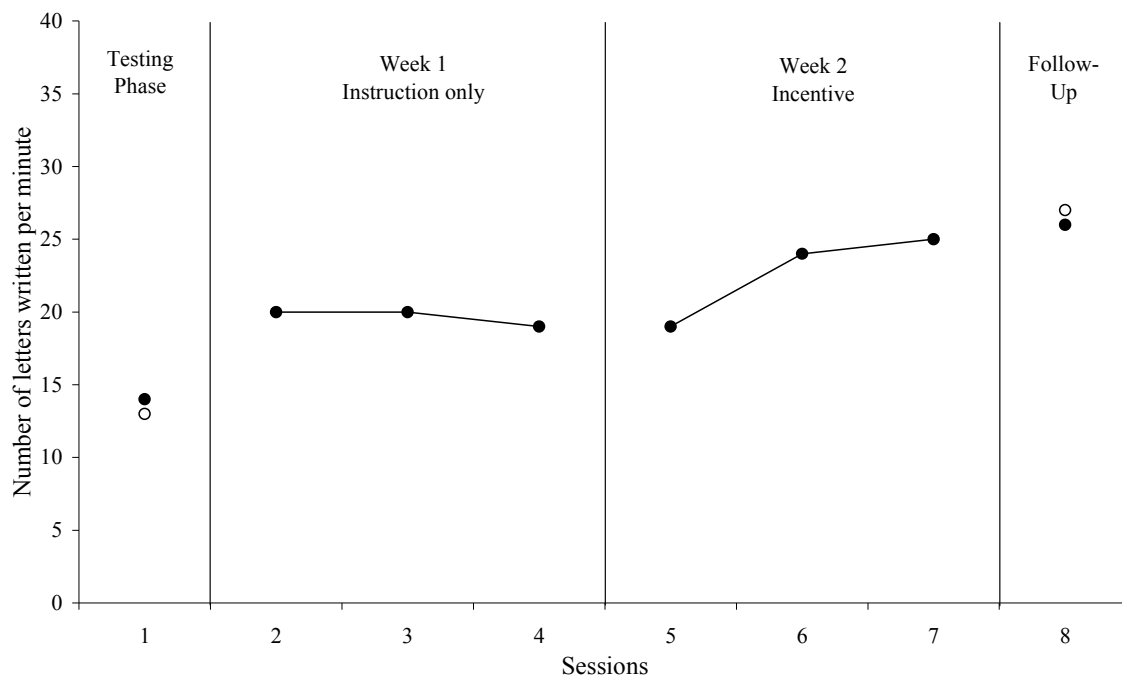


Figure 10. Number of correct letters copied per minute from a level 12 reading book by Katie (filled circles) and number of letters copied per minute from the standard copying task (open circles).

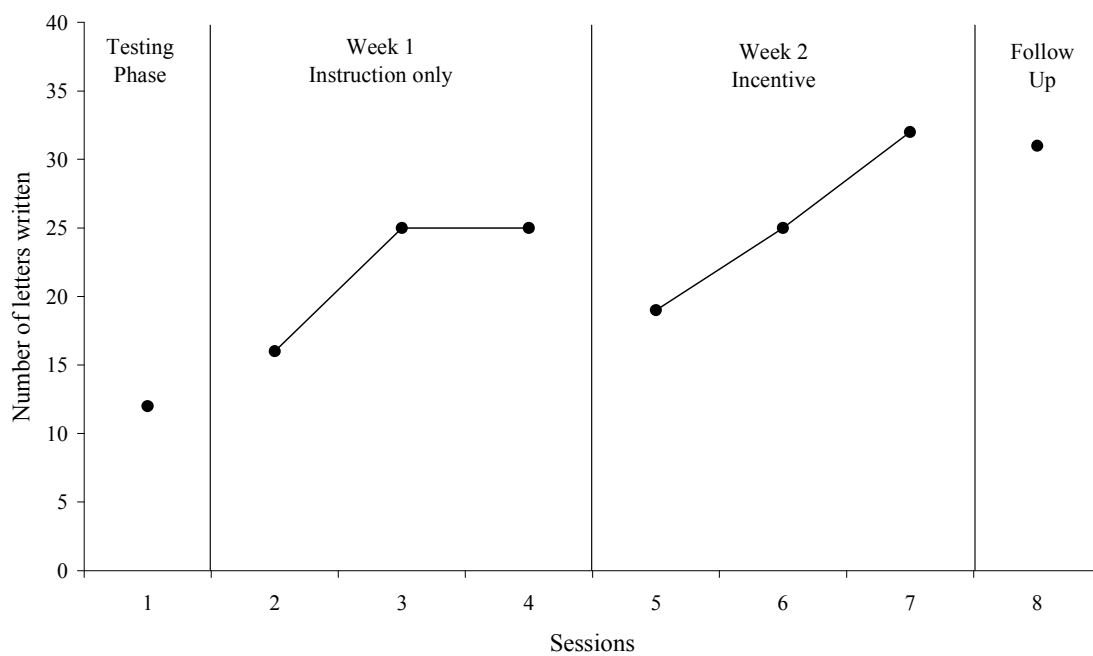


Figure 11. Number of correct alphabet letters copied per minute by Katie.

The teacher noted on the Weekly Reflection sheet for Week 1 of Katie's intervention that the dictation done with the whole class "took approximately 6 minutes – none of my time was required to mark these". Additionally the teacher wrote "[The writer] has introduced a programme and is working with [Katie] herself".

### Discussion

The aim of this Case Experiment was for the teacher to identify the probable cause of Katie's slow writing speed and then to find an intervention that increased her writing fluency till she was able to write at the average speed of her classmates. The teacher was not able to be involved as she said that she could not spare the time from her general teaching. A functional analysis was performed, showing that Katie was able to write faster when provided with one on one attention and a target to achieve. A second week of intervention when Katie was offered a positive reinforcement brought about even greater gains in her writing speed. The hypothesis in this case was that Katie had not had sufficient practice in writing fast. She liked her writing being neat and had acquired some hand gestures, both of which impeded her ability to write fast. Katie needed some motivation to try to go faster and then the opportunity to continue practicing writing faster. The instruction and reward incentives allowed this to happen. Katie's slow writing speed was therefore due to a lack of motivation and not to a performance deficit.

The Weekly Reflection sheets illustrate that the classroom teacher was happy for Katie to be taken out of the classroom 3 times a week for 10 minutes but she was not able to do the intervention herself.



## CHAPTER 7

### GENERAL DISCUSSION

The individual results of the four case experiments, summarised in Table 5, provide an answer to the questions addressed by this investigation: Can teachers complete functional assessments and interventions for children with behaviour difficulties and learning difficulties, and then choose and implement an appropriate intervention? The results showed that a classroom teacher can implement both functional assessments and the appropriate interventions when given the necessary training. However, teachers often struggle to initiate a functional assessment and then struggle to maintain an intervention for a variety of reasons.

*Table 5. Summary of the Findings of Case Experiments 1 to 4*

| Case Experiments              | Description of children                                     | Functional assessment done by: | Functional analysis design and intervention implementation done by: | Results   |
|-------------------------------|---|--------------------------------|---|---|
| Case Experiment 1: Andy       | -Children = 1, boy, 6 yrs, with behaviour difficulties.     | Teacher                        | Teacher   | Andy's on-task behaviour increased and was maintained at over 80%. Intervention was implemented after each self-selected reading and maths session with 100% integrity. |
| Case Experiment 2: Kyle & Tim | -Children = 2, boy, 6 & 7 yrs, with behaviour difficulties. | Writer                         |   | Intervention did not occur because the claimed behaviour difficulties were not observed.  |

*Table 5 (continued). Summary of the Findings of Case Experiments 1 to 4*

| Case                                     | Description of   | Functional             | Functional analysis                                      | Results  |
|--|--|------------------------|--|--|
| Experiments                              | children   | assessment<br>done by: | design and<br>intervention<br>implementation<br>done by: |  |
| Case<br>Experiment<br>3: Erick &<br>Jack | -Children = 2,<br>boy, 7 & 6yrs,<br>with learning<br>difficulties. | Writer &<br>Teacher    | Writer & Teacher   | The reading fluency scores of both<br>children increased modestly during<br>the first intervention with peer tutors,<br>but treatment integrity decreased<br>substantially over the 4 weeks.<br>Greater progress was made by the two<br>children when the intended<br>intervention was implemented by the<br>researcher. |
| Case<br>Experiment<br>4: Katie           | -Children = 1,<br>girl, 7 yrs,<br>with learning<br>difficulties.   | Writer                 | Writer   | The intervention was successful. No<br>treatment integrity was measured as<br>the teacher was unable to introduce an<br>intervention due to time constraints.  |

In Case Experiment 1, it was observed that teachers can complete a functional assessment but will not necessarily use this as a first option or even attempt it without it being required by an external agent. The teacher in this study needed guidance to know how and when to identify the antecedents and consequences of Andy's behaviour. She was able to do some interval recording of his on-task behaviour as well as some ABC narrative recordings. However, the discovery that Andy was cheating in games, and not being reprimanded, only occurred when the

writer used the more detailed Antisocial Development Screen to observe Andy's specific antisocial behaviour and the responses to it. The intervention chosen by the teacher was complex in its management and fading procedure. Overall, the functional assessment identified the factors maintaining Andy's behaviour and the intervention was successful, but it is doubtful that this would have been the case if the writer had not been available as a research consultant.

In Case Experiment 2, it was observed that teachers can sometimes misinterpret or misidentify problem behaviour. The teacher had made a number of assumptions about two boys behaving in particular ways without ensuring that she was correctly identifying the type or frequency of their behaviour. A functional assessment would have highlighted to the teacher that their behaviours were not high frequency and at times were dependent upon the way that she interacted with each of them.

In Case Experiment 3, it is possible to see how lack of knowledge, skill and time prevented the teacher implementing a functional assessment and intervention. The teacher did not know how to go about completing the functional assessment of the reading difficulties experienced by Erick and Jack. She knew from her phonics programme that they were not as quick as most of the others in the class, but she had no formal way of testing their phonemic knowledge. The teacher also did not know the other component skills required for proficient reading. The writer therefore implemented the functional assessment and then analysed the data. The writer recommended the intervention used in the Zintl (2005) study to increase the boys' grapheme recognition fluency. The teacher chose to implement this through peer tutoring as she was too busy to do it herself.

Peer tutoring turned out to be relatively ineffective for a number of reasons. Initially the tutors were open to the novel idea of peer tutoring and applied themselves to their training and then to the tutoring, but they started to lose their interest and motivation for the intervention after the first week. This could have been due to their young age (6 to 7 years) or to a lack of

supervision from the teacher. The teacher had not noticed that the peer tutoring sessions had not occurred and had not observed any improvement in Erick and Jack's reading. The writer took over the implementation of the intervention and met with Erick and Jack three times a week. The writer found that they both responded well when encouraged to better their individual scores. From observations made when the peer tutors were implementing the intervention, Erick and Jack were both more focused and eager to please with an adult than they were with their peers. In order for the intervention to be successful, the practice words needed to be practised at least three times a week and more intensely than had been done with the peer tutors. At the end of the intervention, the teacher expressed her surprise at the number of reading levels that both boys had been promoted to.

Finally, in Case Experiment 4, it was observed how lack of time can prevent the implementation of a functional assessment and intervention. The teacher told the writer that Katie wrote less than half of what the other children were writing in a session. The teacher had unsuccessfully tried a number of interventions and had come to the conclusion that the problem was a fine motor skill deficit. However, she had not and did not know how to explore this idea further. The writer spent some time completing observations of Katie while she was writing, and then measured the speed of all children in the class to determine what writing speed should be set as an aim for Katie. The writer's observations were presented to the teacher, but the teacher was unable to suggest any interventions that she had not already tried. When the writer proposed a number of interventions, they were judged by the teacher as likely to be ineffective. This meant that no intervention was actually introduced by the teacher but left instead to the writer.

The findings from the case experiments are confirmed by the studies reviewed in Chapter 1, on functional assessments and interventions done in mainstream classrooms for children with behaviour difficulties and learning difficulties (Mueller et al., 2003; Noell et al., 1997; Stage et

al., 2006; Witt et al., 1997; Wood et al., Zintl, 2005). None of these studies had the teachers performing the functional assessment or analysing the results to form a hypothesis. In all the studies the research consultants suggested the appropriate intervention which the teacher then received training in how to implement. When implemented correctly, the interventions were all successful. However, in four of the six studies reviewed, when the intervention was poorly implemented the children's results were adversely affected (Noell et al., 1997; Witt et al., 1997; Wood et al., Zintl, 2005). This was particularly seen in Wood et al. (2007) when the teacher implemented the intervention poorly, the boy was only on-task 9 per cent of the time, but when the intervention was implemented with high integrity, the boy was on-task 91 per cent of the time. Treatment integrity was only improved in these four studies by research consultants providing performance feedback to the teacher, or in the case of Zintl (2005), doing the intervention themselves. Two of these studies, Noell et al. (1997) and Witt et al. (1997), state that one of the limitations of their study was that the teacher knew that they were measuring the integrity of their implementation of the intervention and so they question if treatment integrity may have been lower if the teachers were unaware of this. In the remaining two studies, where treatment integrity appeared to remain consistent, the interventions were performed at over 90 per cent integrity (Mueller et al., 2003; Stage et al., 2006). There are many interventions that are known to be effective when implemented with integrity within the classroom (Church, 2003, 2005, 2007a). It may not, however, be practical or realistic for an individual teacher in a mainstream classroom to implement them.

### Issues Facing Teachers in Mainstream Classrooms

Prior to registration, classroom teachers acquire a wide range of teaching skills spanning a range of curriculum areas and children. They learn how to teach, to set routines and timetables, to manage behaviour, to make resources, to organise lessons, and to keep children safe both

physically and culturally. However, classroom teachers often struggle to manage the behaviour or to meet the specific learning needs of individual children in their classes (Prochnow et al., 2000).

#### *Ability to Identify Children with Special Needs*

Research into the application of functional assessment within classrooms, indicates that teachers are able to identify children with special teaching needs with some accuracy. Zintl (2005) asked the teachers participating in the study to refer children who were significantly behind their class peers in learning to read. In Class Y, three out of the four children referred by the teacher met the criteria required by the study, in Class Z1, two out of three children referred met the criteria and in Class Z2, five out of the seven children referred met the criteria. Church et al. (2006) reported that teachers were accurate in classifying individual children as antisocial or not antisocial in 92.3 per cent of cases. Teachers did, however, have more of a tendency to over-identify children with antisocial behaviour rather than to under-identify them. This was seen in Case Experiment 2, where two boys were identified by the teacher as having severe behaviour problems but who, when observed, were found to engage in minimal misbehaviour. In the other case experiments in this study, the teacher was able to recognise that there was a problem and to describe the problem in general terms (i.e. off-task, reading fluency, and writing speed). Teachers appear to be reasonably skilled at identifying children with special needs and occasionally in identifying the specific nature of those special needs.

#### *Ability to Implement Functional Assessment Procedures*

The literature on functional assessment suggests that teachers rarely implement functional assessments within mainstream classrooms without assistance (Ervin et al., 2001). Most published reports indicate that it is the research consultant that implements the functional assessment (Mueller et al., 2003; Noell et al., 1997; Stage et al., 2006; Witt et al., 1997; Wood et al., Zintl, 2005). Research teams often consist of one or more research consultants, some

research assistants and the classroom teacher. The research team collects and analyses data over several days. A teacher on his or her own may not have the time or the knowledge to complete the type of functional assessment described in the research literature.

The present study suggests the classroom teacher may implement functional assessments and interventions erratically and then monitor them poorly, if at all. It is not uncommon for a teacher to stop individual interventions as soon as there are improvements in the child's behaviour or academic work. Church (1999) found that a behavioural intervention worked within a classroom but, that in some cases, it needed to be continued for up to four months for the behaviour changes to become permanent. This means that there is a need for continuing practice of the new skills for the child to achieve a permanent change.

The second common response of teachers is to simplify the intervention. If an intervention is time consuming or there is no rapid improvement in the child's behaviour or progress, then the implementation tends to fade out after time as teachers resort to more customary classroom practices. Zintl (2005) found that the teacher from Room Z2 was not able to oversee the peer tutoring for two weeks during the study and the writer needed to visit to ensure that the peer tutoring occurred regularly.

Functional assessments and interventions for children with behaviour difficulties appear to be more popular than functional assessment for children with learning difficulties. Possibly this is because problem behaviour is more disruptive to the functioning of the class as a whole. Behaviour interventions are also more widely known and more likely to be a part of existing classroom routines.

The case experiments in this study illustrate these observations. They show that a teacher, even one who has been specifically trained in functional assessment, may experience difficulty in implementing a functional assessment to a degree that allows for an appropriate intervention to be chosen. Even when a teacher has identified the probable cause of a problem behaviour or

lack of progress, they may still not be able to identify the appropriate remedial action. In the present investigation, the teacher struggled to think of an effective intervention that she had not already tried and already judged to be unsuccessful for that particular child in Case Experiments 3 and 4. In these case experiments it was the writer who finally chose the intervention as the teacher was unable to do so.

What appears to be needed is better training in solving these kinds of instructional problems. Problem solving is required in order to select an intervention which is likely to be effective. Then, if interventions fail to work and provide positive change for the child, problem solving is needed to modify the intervention to increase its effectiveness. Problem solving to repair interventions means being able to discover why the intervention is not working and then to create an intervention that will work. In Case Experiment 3, Erick and Jack were not progressing in their grapheme fluency at the rate observed by Zintl (2005) even although similar materials and procedures were being used. An analysis of the intervention showed that the amount of practice was decreasing week to week. Erick and Jack were simply not getting enough practice. The teacher might have been able to recognise that practice had been decreasing if she had been keeping a tally, but as she was not able to make time to observe the practice she did not see the decrease in the numbers of sessions or the declining motivation experienced by both the tutors and the children being tutored. While the teacher might have taken over the intervention herself, she was not able to take 5 to 10 minutes of her class teaching time to spend with just two children. This raises issues regarding the nature of teachers' work.

#### *The Nature of Teachers' Work*

The nature of the work required of classroom teachers is one of the central reasons why teachers do not implement individualised functional assessments or interventions with the integrity required for effective change. In New Zealand, one teacher will generally be



responsible for motivating and teaching 20 to 30 children for five hours a day, five days a week. This can only be achieved using group activities. In order to provide a general programme of lessons appropriate for all children, teachers already use time outside of the allocated school hours in order to prepare appropriate lessons. Teachers also have to create their own resources. To individualise work for even one or two children and then monitor their progress involves more work than can be fitted into the time available. There is little time outside of the school day allocated for creating resources for an individual child and there is even less time during a school day to work one-on-one with a child. One on one work is sometimes done by a teacher aide, but none of the children in the present study had needs severe enough to qualify for teacher aide time. In comparison to a teacher, a teacher aide is relatively unskilled and may be facing a need to deal with persistent behaviour and learning difficulties that they have not been trained to deal with.

Teachers become very good at the routine of teaching and managing groups of children within the classroom. What is not well covered in the training of teachers is the ability to work outside of well-used practices and come up with research based solutions for how to teach children with special needs.

It is difficult to see how this problem is to be solved. Smaller classes are not practical due to cost. Increasing teacher competence is a possibility but may be relatively expensive and ineffectual given the results of the present case studies where even a highly trained teacher struggled to implement the necessary assessments and interventions. Better materials might solve some learning difficulties, but are unlikely to solve behaviour problems which are usually a response to the behaviour of others, especially the teacher's moment-to-moment responses to child misbehaviour. Peer tutoring may solve practice problems, but a peer tutor is not able to teach new concepts and may lose motivation as in Case Experiment 3. Teacher aides may increase one-on-one time but teacher aides are unable to engage in specialist teaching and

generally have no training in functional assessment. Some problems can be solved by good resources (i.e. worksheets). These can be used to occupy the class while working with individual children, but the quantity required can be expensive and this type of material is generally not available in New Zealand schools.

### Limitations of this Study

There is a limitation to this study that needs to be identified. Given that one of the main aims of this study was to observe whether teachers in mainstream classrooms are able to perform functional assessments and then follow up with effective interventions, the fact that the present investigation examined the work of only one teacher and six children means that the findings are not yet generalisable to other teachers and situations.

### Conclusions

Research into functional assessment shows us how to identify the factors which are responsible for different kinds of behaviour difficulties and learning difficulties. The research on what works for children with behaviour difficulties and learning difficulties is also very informative, because it shows what is possible in the treatment of these children, at least under well-controlled conditions. The problem of how teachers might use these assessment procedures and effective interventions in busy mainstream classrooms remains to be solved. What is required now is research into how best to provide teachers with the information, the skills and the resources necessary to manage behavior and accelerate learning in children with special educational needs in a class of 20 to 30 children.

## REFERENCES

- Alonzo, J., Ketterlin-Geller, L.R., & Tindal, G. (2007). Curriculum-based measurement in reading and math: Providing rigorous outcomes to support learning. In L. Florian (Ed.), *The SAGE handbook of special education* (pp. 307-318). London: SAGE Publications.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders (Fourth Edition-Text Revision, DSM-IV-TR)*. Washington, DC: American Psychiatric Association.
- Anderson, C. M., English, C. L., & Hendrick, T. M. (2006). Use of the structured descriptive assessment with typically developing children. *Behavior Modification*, 30, 352-378.
- Bourke, R., & Mentis, M. (2007). Self-assessment as a lens for learning. In L. Florian (Ed.), *The SAGE handbook of special education* (pp. 317-330). London: SAGE Publications.
- Brahm, N. (2007). Categories of special educational needs. In L. Florian (Ed.), *The SAGE handbook of special education* (pp. 55-66). London: SAGE Publications.
- British Institute of Learning Disabilities (n.d.). *Fact sheet – learning disabilities*. Retrieved January 31, 2008, from <http://www.bild.org.uk/docs/05faqs/Factsheet%20Learning%20Disabilities.pdf>
- Broussard, C. & Northup, J. (1997). The use of functional analysis to develop peer interventions for disruptive classroom behaviour. *School Psychology Quarterly*, 12, 65-76.
- Carr, E. G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin*, 84, 800-816.
- Carr, E. G. (1994). Emerging themes in the functional analysis of problem behaviour. *Journal of Applied Behavior Analysis*, 23, 147-185.

- Church, R. J. (1996). *The prevalence of children with behaviour disorders in Canterbury primary schools*. Christchurch, New Zealand: University of Canterbury, Education Department in association with the Canterbury Primary Principals' Association.
- Church, R.J. (1999). *Project Early second evaluation report: 1996-1997*. Christchurch, New Zealand: University of Canterbury, Education Department.
- Church, R. J. (2003). *The definition, diagnosis and treatment of children and youth with severe behaviour difficulties: A review of research*. Christchurch, New Zealand: University of Canterbury, Education Department.
- Church, R. J. (2005). *The origins and treatment of delayed development in learning to read*. Paper presented to the annual conference of the New Zealand Association for Research in Education, Dunedin, New Zealand.
- Church, R. J. (2007a). *Accelerating the development of expressive writing skills in low achieving children: A review of research*. Paper presented to the annual conference of the New Zealand Association for Research in Education, Christchurch, New Zealand.
- Church, R. J. (2007b). *EDUC 621: Practical Work Manual*. Christchurch, New Zealand: University of Canterbury, School of Educational Studies and Human Development.
- Church, R. J., & Tyler-Merrick, G. (2007). *Observers' Manual: Observing behaviour in the classroom and early childhood centre*. Christchurch, New Zealand: University of Canterbury, School of Educational Studies and Human Development.
- Church, R. J., Tyler-Merrick, G., & Hayward, H.M. (2006). *Identifying antisocial development in New Zealand children. Phase 1: development of the screening procedure*. Christchurch, New Zealand: University of Canterbury, Education Department.
- Cowley, S. (2006). *Getting the buggers to behave*. London: Continuum International Publishing Group.

- Daly, E. J., III, Witt, J. C., Martens, B., & Dool, E. J. (1997). A model for conducting a functional analysis of academic performance problems. *School Psychology Review, 26*, 554-574.
- Doggett, R. A., Edwards, R. P., Moore, J. W., Tingstrom, D. H., & Wilczynski, S. M. (2001). An approach to functional assessment in general education classroom settings. *School Psychology Review, 30*, 313-328.
- Ervin, R. A., Radford, P. M., Bertsch, K., Piper, A. L., Ehrhardt, K. E., & Poling, A. (2001). A descriptive analysis critique of the empirical literature on school-based functional assessment. *School Psychology Review, 30*, 139-210.
- Evans, I. M., & Paewai, M. K. (1999). Functional analysis in a bicultural context. *Behaviour Change, 16*, 20-36.
- Finkel, A. S., Derby, K. M., Weber, K. P., & McLaughlin, T. F. (2003). Use of choice to identify behavioral function following an inconclusive brief functional analysis. *Journal of Positive Behaviour Interventions, 5*, 112-121.
- Gansle, K. A., & McMahon, C. M. (1997). Component integrity of teacher intervention management behavior using a student self-monitoring treatment: An experimental analysis. *Journal of Behavioral Education, 7*, 405-419.
- Glynn, T. (1995). Pause, prompt, praise: Reading tutoring procedures for home and school partnerships. In S. Wofendale and K. Topping (Eds.), *Parent involvement in literacy: Effective partnerships in education* (pp. 33-44). London: Cassell.
- Grandy, S. E., Peck, S. M. (1997). The use of functional assessment and self-management with a first grader. *Child & Family Behavior Therapy, 19*, 29-43.
- Gresham, F. M., McIntyre, L. L., Olson-Tinker, H., Dolstra, L., McLaughlin, V., & Van, M. (2004). Relevance of functional behavioral assessment research for school-based

- interventions and positive behavioral support. *Research in Developmental Disabilities*, 25, 19-37.
- Gresham, F. M., MacMillan, D. L., Beebe-Frankenberger, M. E., & Bocian, K. M. (2000). Treatment integrity in learning disabilities intervention research: Do we really know how treatments are implemented? *Learning Disabilities Research & Practise*, 15, 198-205.
- Gumbel, T. P., & Golan, H. (2000). Teaching game-playing social skills using a self-monitoring treatment package. *Psychology in the Schools*, 37, 253-261.
- Hanley, G. P., Iwata, B. A., & McCord, B. E. (2003). Functional analysis of problem behaviour: a review. *Journal of Applied Behavior Analysis*, 36, 147-185.
- Hinshaw, S. P., & Zupan, B. A. (1997). Assessment of antisocial behaviour in children and adolescents. In D. M. Stoff, J. Breiling, J. D. Maser (Eds.). *Handbook of antisocial behaviour* (pp. 36-50). Hoboken: John Wiley & Sons Inc.
- Hoff, K. E., Ervin, R. A., & Friman, P. C. (2005). Refining functional behavioural assessment: analyzing the separate and combined effects of hypothesized controlling variables during ongoing classroom routines. *School Psychology Review*, 34, 45-57.
- Horner, R. H. (1994). Functional assessment: Contributions and future directions. *Journal of Applied Behavior Analysis*, 27, 401-404.
- Hosp, M. K., Hosp, J. L., & Howell, K. W. (2007). *The ABCs of CBM: A practical guide to curriculum-based measurement*. New York: The Guilford Press.
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27, 197-209.
- Iwata, B. A., Wallace, M. D., Kahng, S., Lindberg, J. S., Roscoe, E. M., Conners, J., et al. (2000). Skill acquisition in the implementation of functional analysis methodology. *Journal of Applied Behavior Analysis*, 33, 181-194.

- Kern, L., Childs, K. E., Dunlap, G., Clarke, S., & Falk, G. D. (1994). Using assessment-based curricular intervention to improve the classroom behavior of a student with emotional and behavioral challenges. *Journal of Applied Behavior Analysis*, 27, 7-19.
- Lane, K. L., Bocian, K. M., MacMillan, D. L., & Gresham, F. M. (2004). Treatment integrity: An essential – but often forgotten – component of school-based interventions. *Preventing School Failure*, 48, 36-43.
- Liberty, K., Clark, B., & Solomon, C. (2000, November). *Ecological assessment and children on the borderline*. Paper presented at the 2000 New Zealand Association for Research in Education, Hamilton, New Zealand.
- Lindsay, G. (2004). Inclusive education: a critical perspective. In J. Wearmouth, T. Glynn, R. C. Richmond & M. Berryman (Eds.), *Inclusion and behaviour management in schools: Issues and challenges* (pp. 266-285). London: David Fulton Publishers Ltd.
- Lyon, G. R., Fletcher, J. M., Shaywitz, S. E., Shaywitz, B. A., Torgesen, J. K., Wood, F. B., Schulte, A., & Olson, R. (n.d.). *Rethinking learning disabilities*. Retrieved January 30, 2008, from [http://www.ndol.org/documents/SpecialEd\\_ch12.pdf](http://www.ndol.org/documents/SpecialEd_ch12.pdf)
- Lyon, G. R. (1996). Learning disabilities. *The Future of Children*, Spring, 54-76.
- Mace, F. C. (1994). The significance and future of functional analysis methodologies. *Journal of Applied Behavior Analysis*, 24, 385-392.
- Macfarlane, A. H. (2007). *Discipline, democracy, and diversity: working with students with behaviour difficulties*. Wellington: NZCER Press.
- Mash, E. J., & Dozois, D. J. A. (2003). Child psychopathology: A developmental systems perspective. In E. J. Mash & R. A. Barkley (Eds.), *Child Psychopathology* (2<sup>nd</sup> ed.) (pp.3-71). New York: The Guilford Press.

- Ministry of Education (2007). *Special Education Policy*. Retrieved January 24, 2008, from <http://www.minedu.govt.nz/index.cfm?layout=document&documentid=7327&indexid=7954&indexparentid=6871>
- Mitchell, D. (1999). Special education in New Zealand: A decade of change. *New Zealand Journal of Educational Studies*, 34, 199-210.
- Mitchell, D. (2008). What really works in special and inclusive education. London: Routledge.
- Mueller, M. M., Edwards, R. P., & Trahan, D. (2003). Translating multiple assessment techniques into an intervention selection model for classrooms. *Journal of Applied Behavior Analysis*, 36, 563-573.
- Nelley, E., & Smith, A. (2000). *PM Benchmark kit*. Cheltenham: Nelson Thorns Ltd.
- Noell, G. H., Witt, J. C., Gilbertson, D. N., Ranier, D. D., & Freeland, J. (1997). Increasing teacher intervention implementation in general education settings through consultation and performance feedback. *School Psychology Quarterly*, 12, 77-88.
- O'Brien, P., & Ryba, K. (2005). Policies and systems in special education. In B. Fraser, R. Moltzen, & K. Ryba (Eds.), *Learners with special needs in Aotearoa New Zealand* (pp. 22-48). Palmerston North: Dunmore Press.
- O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior* (2<sup>nd</sup> ed.). Pacific Grove: Brooks/Cole Publishing Company.
- Parnas, J., & Zahavi, D. (2002). The role of phenomenology in psychiatric diagnosis and classification. In M. Maj, W. Gaebel, J. J. López-Ibor, & N. Sartorius (Eds.), *Psychiatric diagnosis and classification* (pp. 137-162). Hoboken: John Wiley & Sons Inc.



- Parrish, J. M. (2002). Promoting adaptive behavior while addressing challenging behavior. In M. L. Batshaw (Ed.), *Children with disabilities* (5<sup>th</sup> ed.) (pp. 607- 628). Baltimore: Paul H Brookes Publishing Co.
- Prochnow, J. E., Kearney, A. C., & Carroll-Lind, J. (2000). Successful inclusion: What do teachers say they need? *New Zealand Journal of Educational Studies*, 35, 157-177.
- Riley,-Tillman, T. C., & Chafouleas, S. M. (2003). Using interventions that exist in the natural environment to increase treatment integrity and social influence in consultation. *Journal of educational and psychological consultations*, 14, 139-156.
- Roberts, M. L., Marshall, J., Nelson, J. R., & Albers, C. A. (2001). Curriculum-based assessment procedures embedded within functional behavioral assessment: identifying escape-motivated behaviors in a general education classroom. *School Psychology Review*, 30, 264-277.
- Sasso, G. M., Conroy, M. A., Stichter, J. P., & Fox, J. J. (2001). Slowing down the bandwagon: The misapplication of functional assessment for students with emotional or behavioural disorders. *Behavioral Disorders*, 26, 282-296.
- Smith, R. G., & Churchill, R. M. (2002). Identification of environmental determinants of behaviour disorders through functional analysis of precursor behaviors. *Journal of Applied Behavior Analysis*, 35, 125-136.
- Smith, B. W., & Sugai, G. (2000). A self-management function assessment-based behavior support plan for a middle school student with EBD. *Journal of Positive Behavior Interventions*, 2, 208-217.
- Stage, S. A., Jackson, H. G., Moscovitz, K., Erickson, M. J., Thurman, S. O., Jessee, W et al. (2006). Using multimethod-multisource functional behavioural assessment for students with behavioural disabilities. *School Psychology Review*, 35, 451-471.

- Sterling-Turner, H. E., Robinson, S. L., & Wilczynski, S. M. (2001). Functional assessment of distracting and disruptive behaviors in the school setting. *School Psychology Review*, 30, 211-226.
- Tunmer, W. E., & Chapman, J. W. (2005). Students with learning difficulties and reading problems. In D. Fraser, R. Moltzen, & K. Ryba (Eds.), *Learners with special needs in Aotearoa New Zealand* (pp. 244-268). Palmerston North: Dunmore Press.
- Umbreit, J. (1995). Functional analysis of disruptive behaviour in an inclusive classroom. *Journal of Early Intervention*, 20, 18-29.
- Umbreit, J., Ferro, J., Liaupsin, C., & Lane, K. L. (2007). *Functional behavioural assessment and function-based intervention*. New Jersey: Pearson Education Inc.
- US Department of Education. (n.d.). *Building the legacy: IDEA 2004*. Retrieved February 21, 2008, from <http://idea.ed.gov/explore/view/p/%2Croot%2Cdynamic%2CTopicalArea%2C6%2C>
- Watson, T. S., & Steege, M. W. (2003). *Conducting school-based function behavioural assessments*. New York: The Guilford Press.
- Wearmouth, J. (2004). Inclusion and behaviour management in schools: Issues and challenges. In J. Wearmouth, T. Glynn, R. C. Richmond & M. Berryman (Eds.), *Inclusion and behaviour management in schools: Issues and challenges* (pp. ix-xi). London: David Fulton Publishers Ltd.
- Williams, D. (2002). *Phonemic awareness and decoding fluency in 8- to 9-year old normal progress and low progress readers* (M.Ed Dissertation). Christchurch, N.Z.: University of Canterbury, Education Department.
- Witt, J. C., Noell, G. H., LaFleur, L. H., & Mortenson, B. P. (1997). Teacher use of interventions in general education settings: Measurement and analysis of the independent variable. *Journal of Applied Behavior Analysis*, 30, 693-696.

- Wood, B. K., Umbreit, J., Liaupsin, C. J., & Gresham, F. M. (2007). A treatment integrity analysis of function-based intervention. *Education and Treatment of Children, 30*, 105-120.
- Zintl, S. (2005). *Building decoding fluency in 8- to 9- year old low progress readers* (M.Ed Dissertation). Christchurch, N.Z.: University of Canterbury, School of Education.

## APPENDIX 1

### UNIVERSITY OF CANTERBURY HUMAN ETHICS COMMITTEE APPROVAL LETTER

HEC Ref: 2007/101

23 August 2007

Ms Melanie Robinson  
School of Educational Studies & Human Development  
UNIVERSITY OF CANTERBURY

Dear Melanie

The Human Ethics Committee advises that your research proposal “Meeting the learning needs of individual children in the mainstream classroom” has been considered.

Thank you for your replies to points 1, 3 4 and 5 raised by the Committee which we accept. Regarding the second point i.e. following the initial assessment being made parents and caregivers of the child selected for the detailed section of the project should consent to the specifics of the project, while the Committee understand your argument in this regard, we recommend that you as a researcher send the necessary information to the parents. This is to ensure that they are clear that this stage of the project is associated with your University research project and has University of Canterbury Human Ethics clearance.

I am pleased to advise that your proposal has been approved with the above in mind and subject to the incorporation of the amendments you have provided in your email of 15 August 2007.

Yours sincerely

Dr Michael Grimshaw  
*Chair, Human Ethics Committee*

## APPENDIX 2

### TEACHER'S WEEKLY REFLECTION SHEET

#### **Meeting the learning needs of individual children in the mainstream classroom**

**Date:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

**Child:** \_\_\_\_\_

#### **Weekly Reflection**

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Please complete the following questions for each of the participating children in your classroom at the end of each week, with regard to their current individualised education programmes.

1. Has the introduction of (child's name)'s individualised education programme involved you in any extra work? If yes, please describe.

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2. Have you received any assistance or support in implementing (child's name) individualised education programme? If yes, please describe.

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3. Please list any additional support that would assist you to implement the individualised part of this child's current classroom programme?

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# APPENDIX 3

## RECORDING SHEET FOR WEEKLY HAND RESULTS

### Hands on Goal Tracking Sheet

Name: \_\_\_\_\_

| <b>Reading</b>                   |           | Start | Kind & quiet words | Kind hands & feet | Play fair | Tidy up | Total | Reward criteria |
|----------------------------------|-----------|-------|--------------------|-------------------|-----------|---------|-------|-----------------|
| <b>W<br/>O<br/>O<br/>K<br/>1</b> | Monday    |       |                    |                   |           |         |       | 3/5             |
|                                  | Tuesday   |       |                    |                   |           |         |       | 3/5             |
|                                  | Wednesday |       |                    |                   |           |         |       | 3/5             |
|                                  | Thursday  |       |                    |                   |           |         |       | 3/5             |
|                                  | Friday    |       |                    |                   |           |         |       | 3/5             |

| <b>Maths</b>                     |           | Start | Kind & quiet words | Kind hands & feet | Play fair | Tidy up | Total | Reward criteria |
|----------------------------------|-----------|-------|--------------------|-------------------|-----------|---------|-------|-----------------|
| <b>W<br/>O<br/>O<br/>K<br/>1</b> | Monday    |       |                    |                   |           |         |       | 3/5             |
|                                  | Tuesday   |       |                    |                   |           |         |       | 3/5             |
|                                  | Wednesday |       |                    |                   |           |         |       | 3/5             |
|                                  | Thursday  |       |                    |                   |           |         |       | 3/5             |
|                                  | Friday    |       |                    |                   |           |         |       | 3/5             |

| Goal                | Reading /4 | Maths /4 |
|---------------------|------------|----------|
| Start               |            |          |
| Kind & gentle words |            |          |
| Kind hands & feet   |            |          |
| Play fair           |            |          |
| Tidy up             |            |          |

# APPENDIX 4

## WILLIAMS' PHONEMIC SEGMENTATION TEST

(Adapted from the QUIL TEST)

Date: \_\_\_\_\_ Tester: \_\_\_\_\_ Participant: \_\_\_\_\_

I'm going to say some words and you will have to listen carefully. You are going say the sounds in the words and I want you to use your fingers to help you. In the word *it* there are two sounds - /i/ and /t/.

The tester demonstrates two sounds by saying "it" and then putting down her small finger and saying "i/i" and ring finger and saying "t/t".

Now we are going to do some practice items. Some of the words are made up words and some are real words. Say the word first. Then say the sounds.

The tester gives feedback and if necessary further practice on the practice items.

fom? (3)      baby? (4)      knife? (3)      stelp? (5)      sledge? (4)

Say the word first. Then say the sounds.

| Stimuli     | Response                 | Sounds | Sounds | Word Score |
|-------------|--------------------------|--------|--------|------------|
| 1. big      | /b/ /i/ /g/              | 3      |        | 1 0        |
| 2. oskad    | /o/ /s/ /k/ /a/ /d/      | 5      |        | 1 0        |
| 3. itch     | /i/ /tch/                | 2      |        | 1 0        |
| 4. frog     | /f/ /r/ /o/ /g/          | 4      |        | 1 0        |
| 5. lek      | /l/ /e/ /k/              | 3      |        | 1 0        |
| 6. strebe   | /s/ /t/ /r/ /e/ /be/     | 5      |        | 1 0        |
| 7. on       | /o/ /n/                  | 2      |        | 1 0        |
| 8. plate    | /p/ /l/ /a/ /te/         | 4      |        | 1 0        |
| 9. yut      | /y/ /u/ /t/              | 3      |        | 1 0        |
| 10. vist    | /v/ /i/ /s/ /t/          | 4      |        | 1 0        |
| 11. dancer  | /d/ /a/ /n/ /c/ /er/     | 5      |        | 1 0        |
| 12. og      | /o/ /g/                  | 2      |        | 1 0        |
| 13. zokt    | /z/ /o/ /k/ /t/          | 4      |        | 1 0        |
| 14. white   | /wh/ /i/ /te/            | 3      |        | 1 0        |
| 15. stamp   | /s/ /t/ /a/ /m/ /p/      | 5      |        | 1 0        |
| 16. absence | /a/ /b/ /s/ /e/ /n/ /ce/ | 6      |        | 1 0        |
| Raw Scores  |                          |        | /60    |            |

Words added to QUIL in bold.

Table constructed by Deborah Williams and Karen Bradley.

# APPENDIX 5

## CANTERBURY DECODING FLUENCY TEST

Date: \_\_\_\_\_ Tester: \_\_\_\_\_ Participant: \_\_\_\_\_

Graphemes Correct: \_\_\_\_\_ Errors: \_\_\_\_\_ Correct Graphemes per Minute: \_\_\_\_\_

|             |             |             |            |            |    |
|-------------|-------------|-------------|------------|------------|----|
| <u>pa</u>   | <u>in</u>   | <u>to</u>   | <u>eat</u> | <u>ka</u>  |    |
| <u>on</u>   | <u>far</u>  | <u>shoo</u> | <u>er</u>  | <u>do</u>  | 10 |
| <u>oil</u>  | <u>bee</u>  | <u>hay</u>  | <u>lee</u> | <u>so</u>  |    |
| <u>ed</u>   | <u>the</u>  | <u>vee</u>  | <u>oat</u> | <u>jar</u> | 20 |
| <u>eel</u>  | <u>no</u>   | <u>at</u>   | <u>we</u>  | <u>urn</u> |    |
| <u>quit</u> | <u>aim</u>  | <u>me</u>   | <u>oo</u>  | <u>go</u>  | 30 |
| <u>or</u>   | <u>zoo</u>  | <u>boy</u>  | <u>why</u> | <u>irk</u> |    |
| <u>coo</u>  | <u>cha</u>  | <u>owl</u>  | <u>ha</u>  | <u>art</u> | 40 |
| <u>ra</u>   | <u>up</u>   | <u>ox</u>   | <u>out</u> | <u>you</u> |    |
| <u>shoo</u> | <u>eat</u>  | <u>eel</u>  | <u>bee</u> | <u>pa</u>  | 50 |
| <u>to</u>   | <u>in</u>   | <u>hay</u>  | <u>jar</u> | <u>urn</u> |    |
| <u>the</u>  | <u>aim</u>  | <u>ka</u>   | <u>boy</u> | <u>do</u>  | 60 |
| <u>oo</u>   | <u>me</u>   | <u>er</u>   | <u>go</u>  | <u>cha</u> |    |
| <u>vee</u>  | <u>out</u>  | <u>coo</u>  | <u>owl</u> | <u>far</u> | 70 |
| <u>at</u>   | <u>up</u>   | <u>irk</u>  | <u>ha</u>  | <u>oil</u> |    |
| <u>lee</u>  | <u>oat</u>  | <u>zoo</u>  | <u>ra</u>  | <u>or</u>  | 80 |
| <u>we</u>   | <u>quit</u> | <u>so</u>   | <u>ed</u>  | <u>why</u> |    |
| <u>on</u>   | <u>art</u>  | <u>ox</u>   | <u>no</u>  | <u>you</u> | 90 |



# APPENDIX 6

## CHILDREN'S COPY OF CANTERBURY DECODING FLUENCY TEST

|           |             |             |             |            |            |
|-----------|-------------|-------------|-------------|------------|------------|
| <b>1</b>  | <b>pa</b>   | <b>in</b>   | <b>to</b>   | <b>eat</b> | <b>ka</b>  |
| <b>2</b>  | <b>on</b>   | <b>far</b>  | <b>shoo</b> | <b>er</b>  | <b>do</b>  |
| <b>3</b>  | <b>oil</b>  | <b>bee</b>  | <b>hay</b>  | <b>lee</b> | <b>so</b>  |
| <b>4</b>  | <b>ed</b>   | <b>the</b>  | <b>vee</b>  | <b>oat</b> | <b>jar</b> |
| <b>5</b>  | <b>eel</b>  | <b>no</b>   | <b>at</b>   | <b>we</b>  | <b>urn</b> |
| <b>6</b>  | <b>quit</b> | <b>aim</b>  | <b>me</b>   | <b>oo</b>  | <b>go</b>  |
| <b>7</b>  | <b>or</b>   | <b>zoo</b>  | <b>boy</b>  | <b>why</b> | <b>irk</b> |
| <b>8</b>  | <b>coo</b>  | <b>cha</b>  | <b>owl</b>  | <b>ha</b>  | <b>art</b> |
| <b>9</b>  | <b>ra</b>   | <b>up</b>   | <b>ox</b>   | <b>out</b> | <b>you</b> |
| <b>10</b> | <b>shoo</b> | <b>eat</b>  | <b>eel</b>  | <b>bee</b> | <b>pa</b>  |
| <b>11</b> | <b>to</b>   | <b>in</b>   | <b>hay</b>  | <b>jar</b> | <b>urn</b> |
| <b>12</b> | <b>the</b>  | <b>aim</b>  | <b>ka</b>   | <b>boy</b> | <b>do</b>  |
| <b>13</b> | <b>oo</b>   | <b>me</b>   | <b>er</b>   | <b>go</b>  | <b>cha</b> |
| <b>14</b> | <b>vee</b>  | <b>out</b>  | <b>coo</b>  | <b>owl</b> | <b>far</b> |
| <b>15</b> | <b>at</b>   | <b>up</b>   | <b>irk</b>  | <b>ha</b>  | <b>oil</b> |
| <b>16</b> | <b>lee</b>  | <b>oat</b>  | <b>zoo</b>  | <b>ra</b>  | <b>or</b>  |
| <b>17</b> | <b>we</b>   | <b>quit</b> | <b>so</b>   | <b>ed</b>  | <b>why</b> |
| <b>18</b> | <b>on</b>   | <b>art</b>  | <b>ox</b>   | <b>no</b>  | <b>you</b> |

# APPENDIX 7

## LIST OF THE 60 PRACTICE WORDS

| Practice List A1 | Practice List A2 | Practice List B1 | Practice List B2 |
|------------------|------------------|------------------|------------------|
| fly              | boil             | her              | coin             |
| nice             | teeth            | tune             | video            |
| kick             | shoot            | rain             | queen            |
| chase            | sharp            | dark             | porch            |
| wait             | say              | cuff             | boot             |
| cute             | girl             | loan             | town             |
| yes              | term             | then             | loud             |
| run              | road             | way              | that             |
| van              | down             | feet             | Roy              |
| Ken              | mouth            | zip              | church           |
| quiz             | short            | cake             | zoom             |
| prize            | cheap            | get              | shirt            |
| not              | hurt             | size             | job              |
| chain            | weed             | wide             | year             |
| box              | joy              | six              | my               |

APPENDIX 8

EXAMPLE OF CHILDREN'S PRACTICE FLIP CARDS

**fly**

**nice**

**kick**

**chase**

**wait**

## APPENDIX 9

### STANDARD COPYING TASK GIVEN TO CLASS

A big cat is looking down at a little hole.

The mice are inside the hole.

The cat sits by the hole.

The mice can see her.

The mice will stay inside the hole where they are safe.

The cat stays by the hole.

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